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BALLISTIC AND CRUISE MISSILE PROLIFERATION IN THE THIRD WORLD

HEARING

BEFORE THE

SUBCOMMITTEE ON
DEFENSE INDUSTRY AND TECHNOLOGY

OF THE

COMMITTEE ON ARMED SERVICES
UNITED STATES SENATE

ONE HUNDRED FIRST CONGRESS

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BALLISTIC AND CRUISE MISSILE PROLIFERATION IN THE THIRD WORLD

TUESDAY, MAY 2, 1989

U.S. Senate,
Committee on Armed Services,
Subcommittee on Defense Industry and Technology,
Washington, DC.

The subcommittee met at 9:30 a.m. in room SR-222, Russell Senate Office Building, Senator Jeff Bingaman (chairman of the subcommittee) presiding.

Committee members present: Senators Bingaman, Byrd, McCain, Wallop, and Lott.

Committee staff member present: Lucia M. Chavez, security control officer.

Professional staff members present: Robert G. Bell, Richard E. Combs, Jr. and William H. Smith.

Minority staff members present: Brian D. Dailey and Judith A. Freedman, professional staff members.

Committee members' assistants present: Leon S. Fuerth, assistant to Senator Gore; Jefferson B. Seabright, assistant to Senator Wirth; and C. Richard D'Amato, assistant to Senator Byrd.

OPENING STATEMENT BY SENATOR JEFF BINGAMAN, CHAIRMAN

Senator Bingaman. The Defense Industry and Technology Subcommittee meets this morning to discuss the proliferation of ballistic and cruise missiles to Third World countries. Discussion will focus on how we and our allies can strengthen and expand our observance of the Missile Technology Control Regime. In addition, we will review measures that would reduce the transfer of missiles and missile technology from newly industrialized countries to other developing countries.

We are fortunate this morning to lead off with two members of Congress, Senator DeConcini and Congressman Berman. Senator DeConcini will explain his concern about the spread of missiles and propose a possible solution. Congressman Berman will review legislation that he has proposed which would impose strict sanctions against those who violate the Missile Technology Control Regime.

We also have an eminently qualified group of non-congressional witnesses. One panel consists of Assistant Secretary Holmes from the Department of State and Deputy Assistant Secretary Hinds from the Department of Defense. They are accompanied by experts from the Department of Commerce.

On the second panel are three well-known and respected outside experts, Dr. Carus, Dr. Nolan and Dr. Kemp, who will share with us their concerns about the growing numbers of countries who have ballistic missiles, analyzing the problem and reviewing possible solutions.

After World War II, we and our allies sought to prevent future wars of comparable or even more terrible destruction. Throughout the post-war period, the main focus has been on measures to stop the proliferation of nuclear weapons.

For the past two decades, we have also been seeking ways to prevent the spread of chemical weapons, but, until recently, we have failed to take strong measures to prevent the transfer of missile technology that provides the surest and most deadly means of delivering these weapons of mass destruction.

We should not delude ourselves that available weapons will not be used. The targeting of cities with missiles during the Iran-Iraq war and Iraq's use of chemical weapons, even on its own civilian Kurdish population, confirmed our worst fears—namely, countries will employ these weapons particularly if there is little or no threat of retaliation.

In April 1987, the United States and six allied countries adopted the Missile Technology Control Regime (MTCR), an accord designed to deny the transfer of missiles and missile technology to the Third World. Despite our efforts, a West German and an Italian firm have assisted Argentina in the development of the Condor II.

Subsequently, this technology was transferred to Egypt and Iraq. Also, according to West German press reports, several German firms are helping Iraq extend the range and payload of its already impressive missile technology.

MTCR is said to have slowed missile transfers and the spread of missile technology; nevertheless, India is preparing to launch its first intermediate-range ballistic missile. China sold its 1,600-mile range CSS-II missile to Saudi Arabia and has agreed to provide Brazil with technology for the construction of Long March rockets, which have been used to launch satellites. And Brazil is a major arms supplier to Libya.

During the hearing, I would like to explore some specific measures that we might take to slow missile proliferation. We must make clear to our MTCR partners in developing countries that the United States will not transfer missiles and missile technology controlled by the MTCR.

While we will cooperate with countries that have legitimate civilian space programs by providing scientific space packages and launch services, we will not transfer technology that would assist those countries in the development of offensive missile systems and re-entry vehicles. By strictly observing the intent of the MTCR, we will set a standard for our partners.

We must reach an understanding with our allies that would permit the expansion and strengthening of the MTCR. We must agree that the purpose of the MTCR is to restrict the proliferation of missiles regardless of the recipient country's capacity to produce nuclear devices. Chemical warheads and even advanced conventional munitions, such as fuel-air explosives, are just as threatening.

Further, all like-minded European countries need to be encouraged to become MTCR members and we should welcome Soviet and East European participation. Finally, we must seek bilateral and regional agreements that will build upon the MTCR goal of reducing the spread of ballistic and cruise missiles and missile technology.

In my view, there is no rationale that justifies the continuation of U.S. technology exchanges and cooperative programs with those countries that sell missiles and missile technology to the developing world.

The world is becoming a more dangerous place despite a welcome reduction in east-west tensions. Ironically, with the INF Treaty, while the treaty embodies the desire of the West to reduce the danger of missile attack, the missiles most in demand throughout the Third World are exactly those that will be destroyed under the INF Treaty.

While the developed world has sought to reduce its armories, the developing world now seeks to acquire and to deploy the most malevolent of the West's weapons. The convergence of missiles and chemicals and nuclear weapons in the Third World distorts relationships between regional powers, enhancing the possibility that these weapons will be turned against civilian populations.

In the Middle East, the combination of vast oil wealth and regional hostility has increased the possibility of a conflict that would engage the super powers on behalf of their client states. The challenge we face is to contain this threat by significantly reducing the access of developing countries to missiles and missile technology.

I will now turn to the ranking minority member on the committee, Senator Wallop, for any statement that he would like to make.

Senator **Wallop**. Jeff, thank you, and thank you particularly for holding the hearing this morning on the frightening development of ballistic missile proliferation. As we review what we are doing about this problem, I think we must surely keep some things clear.

First, we must be very careful that we do not lump all countries together regardless of their affinities in our pursuit of constraints on the export of ballistic missile technology. One of the catalysts for the nuclear non-proliferation treaty was the emergence of Britain and France as major nuclear powers in their own rights in the early 1960s.

In hindsight, I suspect most of us would agree, notwithstanding the handwringing over the French program at the time, that French and British nuclear programs have been a force for stability. The point here is that we must keep ballistic missile technology out of the hands of those nations that have demonstrated that they would use them as tools of aggression.

Second, Mr. Chairman, I believe it is important to recognize the very real limitations of an approach to this problem similar to that taken with the nuclear proliferation treaty. It might be said, and I think it can be said, that the nuclear proliferation treaty never prevented a single country that had designs on a nuclear weapons program from developing one. Those that sought such a program did not become a party to the agreement. Those that eschewed nuclear weapons did sign on, but at no loss.

Here, it is important to remember that such an agreement alone, while perhaps useful at the margin, will do little by itself to prevent nations hostile to our interests from acquiring such weaponry. In this regard, it would, at this juncture, be both morally confusing and tactically unwise to join either the Chinese or the Soviet Union in developing a joint broach to this problem.

No matter how attractive this might appear from a public relations standpoint, it is the Soviet Union and the PRC that are currently supplying the bulk of ballistic missiles to the Third World. The Soviet Union has even refused to sign the Missile Technology Control Regime, which you mentioned, currently in force amongst western nations. We must see, prior to any such joint efforts, a commitment on both their parts to cease these activities.

Finally, Mr. Chairman, the proliferation of ballistic missiles in the Third World means that, increasingly, our forces in the Mediterranean, in the Persian Gulf and elsewhere will face the threat of conventional, unconventional and chemical munitions delivered by ballistic missiles.

In the early part of the next century, we may be faced with Third World nations that possess even intercontinental-range missiles. And that is one reason why I have endorsed the Israeli development of the Arrow ATBM program. I have strongly supported development of an ATBM for Western Europe and still pursue some type of limited protection system, such as that endorsed by Senator Nunn, for the United States.

No matter how successful we are in controlling the spread of these weapons to countries hostile to our interests, we cannot count on being 100 percent successful. We must possess the means in our own hands to defend our own military forces and our people against this threat.

The hearing this morning is timely; the problem is real. I commend you for holding it.

Senator BINGAMAN. Thank you very much. We have one other member of our subcommittee and then a member of the full committee here. If they would like to make any statement at this point, I would be anxious to hear from them. Senator Byrd, did you have any statement you wanted to make?

Senator BYRD. No, thank you, Mr. Chairman.

Senator BINGAMAN. Senator McCain, did you have any statement?

Senator MCCAIN. No, thank you, Mr. Chairman.

Senator BINGAMAN. Then we will call on our first witness. Senator DeConcini has had a long standing interest in this whole area and has provided a great deal of the leadership here in the Congress in trying to come to grips with it. We are very pleased to have you here, Senator.

STATEMENT OF HON. DENNIS DeCONCINI, A U.S. SENATOR FROM THE STATE OF ARIZONA

Senator DECONCINI. Mr. Chairman, thank you very much. Senator Wallop, Senator Byrd and Senator McCain, I commend you for holding these hearings. The attention to this issue must be accelerated and brought to the fore and that is what you are doing here.

This is a catastrophic problem that must be addressed, evaluated and solved prudently, and, in my judgment, quickly. If the missile proliferation environment was volatile years ago, now it is loaded, primed and perilous.

Five years ago, countries which had ballistic missiles capable of carrying nuclear warheads were limited to just a handful. Now we see vast black markets, extended international defense networks of ballistic missile sales, stepped-up arms races between second- and third-tier countries. We see increased ranges and better accuracy in the technology, which further complicates the cost of solving this particular problem. Wars in Third World countries will no longer be low-intensity conflicts. They will be highly priced, highly risky and highly destabilizing.

My interest in missile proliferation started long ago but was focused, at that time, particularly on a weapon system known as the Stinger missile. This is a mobile, surface-to-air missile with which all of you are familiar. It has a range of 3 to 5 miles and has a devastating result. It is an ideal terrorist weapon and it is symbolic of our state-of-the-art technology.

The Reagan administration wanted to sell it to and introduce it into the Persian Gulf region. The administration also wanted to sell Maverick G and D missiles into this region in the last couple of years. The Maverick G had never been sold before in the area and was not even in our own Air Force inventories.

I have attempted, through amendments on the floor and in committee, to restrict both missiles from being thrown into this tinderbox. My basic concern is that we have already seen a massive build-up of all types of weapons in the gulf. We have SMART weapons, cruise missiles, surface-to-air missiles, SCUDs and many more.

Last year in the World Military Expenditure and Arms Transfer 1987, the Arms Control and Disarmament Agency estimated that the countries in the Middle East, excluding Egypt and Israel, spent $450 billion in the last 10 years on military expenditures. In one year, 1987, it included $140 billion in total arms imports. Add another $20 billion in arms imports to Egypt and Israel, and you see the sizable problem we have.

If you can imagine $160 billion worth of arms imported in 1 year into one small area of the Persian Gulf, you can easily see how destabilizing and threatening this is to world peace. Egypt, Iraq, Iran, Israel, Libya, Saudi Arabia, Syria, North and South Yemen all have ballistic weapon capability. This to me is frightening.

We are now witnessing a proliferation of missiles all over the world, not limited to the Middle East. India is pushing ahead with plans to test a new intermediate-range ballistic missile that could carry nuclear warheads and increase the country's military clout. India's new missile, the Agni, could propel a 2,000-pound warhead 1,000 to 1,500 miles. This only adds to their long line of defense expansions in the last decade, which obviously make Pakistan and China nervous.

The People's Republic of China has sold ballistic missiles secretly to Saudi Arabia, while Egypt, Argentina, Brazil and Pakistan continue to pursue their ballistic missile programs. This creates a severe problem for the United States in terms of pursuing world peace, protecting our citizens from hostile attacks, and protecting our troops abroad. The cost of improving our defense system in the future could by itself cause us severe budget problems.

What can we do to address the concerns? This committee is bringing attention to the problem and I strongly applaud you for this effort. I have some suggestions. I would like to share with the committee the results of a study I have requested from the General Accounting Office. This will be completed in early September 1989 and will analyze and evaluate the United States' efforts to control export of missiles and the technology used to develop them. This would also include an evaluation of the efforts of the Missile Technology Control Regime.

Second, I have also recently written to and spoken with Secretary Baker about creating an office within the State Department to specifically focus on this concern. I am working with Senator Byrd at this very moment and our staffs are working on language. Hopefully, we will have more to report soon and, perhaps, some agreement with the Secretary.

Other steps by which to address this problem might be to begin now to attach conditions to our foreign assistance programs. We might stress to aid recipients that developing ballistic missiles such as the Agni or the Condor cost billions of dollars. This takes money away from the country's domestic economic aid and development programs, programs that are consequently funded through U.S. assistance. We must discourage this misplaced priority of foreign assistance funds.

And fourth, we in Congress must work with the administration to encourage other countries to join the Missile Technology Control Regime. China and the Soviet Union are not members. Senator Wallop says we need to be careful; I agree. But I think, Mr. Chairman, we need to move ahead.

I hope that this hearing today can come up with some more answers. We desperately need solutions; desperately need to get the Soviets and the Chinese to cooperate and to sit down and talk seriously about being part of a more sane world. Most of all, we need to get out of the starting block and begin actively pursuing a strategy and plan to address worldwide missile proliferation.

We must begin this difficult task within Congress, at the highest level of the State Department, and, of course, the White House. The administration might say, "Read my lips on this program." But mere lip service will not suffice. We in Congress need to speak out loudly and firmly. We need action and we need it now.

I thank the committee for the opportunity to be here and express my views. I look forward to the results of your hearing, Mr. Chairman.

Senator BINGAMAN. Thank you very much for that statement. I appreciate it very much. Our plan at this point was to hear from Congressman Berman and then, I do not know if any of the committee would have questions. Are you able to stay to hear——

Senator DECONCINI. I would like to stay and listen to the Congressman's testimony.

Senator BINGAMAN [continuing]. Congressman Berman's statement. Congressman Berman is the sponsor of legislation on the House side to put some additional teeth into the Missile Technology Control Regime by imposing strict sanctions against those countries that violate that regime. We are very pleased to have you here and look forward to your statement.

STATEMENT OF HON. HOWARD L. BERMAN, A U.S. REPRESENTATIVE FROM THE STATE OF CALIFORNIA

Mr. **Berman**. Thank you very much, Mr. Chairman. I want to join with Senator Wallop and Senator DeConcini in congratulating you for scheduling this hearing on this complicated and largely neglected problem that I think deserves a great deal more attention.

I might just mention initially that the legislation in the House, which I will discuss a little bit in the testimony, focuses on the companies in those countries that—it is a company-related sanction proposal as opposed to a sanction against a particular country.

The problem of ballistic missile proliferation is a source of tremendous concern to me. The spread of this advanced technology to an increasing number of countries poses a serious threat to the security of the United States and its allies. I believe that the response of the United States and its strategic partners to this challenge will define, for a long time to come, the coherence with which we are prepared to endow that alliance.

That the proliferation of ballistic missiles is a threat to the United States and its allies is a proposition one would have thought it unnecessary to reiterate. Yet, the laxity with which many countries now apply themselves to preventing their spread begs us to do so again.

A number of the countries now acquiring ballistic missiles, as has been pointed out now several times this morning, already possess chemical weapons. There is evidence that others in this category are actively pursuing a nuclear capability. To extend the reach of these countries' weapons, even their conventional weapons, to points throughout the Middle East, Europe, and, in the case of Argentina, in our own hemisphere, is dangerous and destabilizing.

The relevance of this phenomena to our allies should be obvious and premonitory. And, to some of them, I am sure it is. For Great Britain, there is the spectre of Argentina, with whom it has been at war this decade. For Italy, there is the memory of Libya's landing a SCUD missile just short of one of its Coast Guard facilities in 1986. The United States has many military assets in Europe and the Middle East of considerable importance to the alliance, which will soon be within range of some of the programs this committee will be discussing today.

This brings me back to the question of alliance coherence. It strikes me that there is a significantly lower standard of cooperation expected with regard to countering threats from the outside of Europe, as compared with threats from the Warsaw Pact, although, in the last few days, there even seems to be some difference with regarding that particular issue as well.

Considering that many well-respected theorists rate the more likely and more imminent threat to western interests as coming from without the European theater, it is my view that this disjunction is fatuous. It is in this context that I find tolerance by a number of allied governments of the continuing sale of missile technology to be seriously disturbing.

If the costs borne by alliance members in countering ballistic missile proliferation were enormous, or if there were genuine disagreement as to the thrust of the policy, lack of enforcement cooperation would be comprehensible. But this is not the case. The United States and its major allies agreed some years ago to stop cold the proliferation of ballistic missiles. It nonetheless continues unabated. The enforcement provisions instituted by many countries have proven utterly ineffective.

According to the provisions of the Missile Technology Control Regime, formally adopted in April 1987, adherent countries have committed themselves to preventing their companies from exporting equipment or technology that contribute to the acquisition of missiles which can carry a payload of 500 kilograms to a distance of at least 300 kilometers.

There is no international organization to monitor exports, and each national government is expected to regulate exports from its own country. Where differences arise, resolution is left to the individual country. The regime has proven insufficient to the task.

The evidence of European involvement in the ongoing spread of this advanced weaponry is clear and unambiguous. West Germany's largest aerospace firm, MBB, has played a key role in a joint Argentine, Egyptian and Iraqi missile program since the early 1980s. Several reliable sources track that cooperation well beyond the official effective date of the MTCR and years after its informal observance.

SNIA-BPD, a prominent subsidiary of the Italian industry leader, Fiat, has reportedly contributed vital components to this missile system, whose range approaches 1,000 kilometers. A French company is reported to be providing valuable inertial guidance components to this project. There are also disturbing reports of MBB's participating in a separate Iraqi missile project in the northern Iraqi city of Mosul, the suspected site of Iraqi chemical weapons development.

In their irresponsible efforts to make ballistic missiles technology available to other countries, these companies are surreptitiously and not so surreptitiously playing a determinant role in an impending catastrophe. Recent developments, including the proven willingness of Iraq to use chemical weapons against civilian populations and the development of a Libyan capacity to produce chemical weapons underscore the urgent need to put some teeth into efforts to curb the spread of ballistic missile technology.

Allied response in the face of these direct affronts to the MTCR by western companies will be instructive. My own view is that the United States, because it has the means and the will to do so, must take the lead. There are many occasions on which the United States is not in a position to effectively influence the behavior of actors in another country, especially at a cost it can afford. This is not true in this instance.

In February of this year, as you mentioned, Mr. Chairman, I introduced legislation which will require the President to impose at least one of three sanctions on any company he finds in violation of the Missile Technology Control Regime. The sanctions are: (1) denial of U.S. export licenses; (2) denial of U.S. Government contracts; and (3) a ban on imports in the United States from any such company.

This legislation is not meant as an affront to our security partners. Indeed, it applies equally to companies whose nationality is not represented among the MTCR countries. It is worth mentioning, too, that I do not propose this path without an appreciation of the irony of the often-embarrassing U.S. position. I can think of more than one occasion where the United States has reneged on its own highly touted foreign policy controls in pursuit of an immediate, ballistic objective.

Still, I do not think the countries whose companies are violating the MTCR harbor any ulterior justifications for the ongoing programs by the companies in these countries. It is possible that our allies have done as much as they politically can, though a number of officials of the Federal Republic of Germany have signalled a willingness to do more.

But there is good reason to believe that, by enacting this legislation, the United States could positively influence the profit-driven corporate planning of missile manufacturers. Companies engaged in these projects will be forced to forego their business with us if they continue to pursue these extremely risky and ill-advised ventures. I think it entirely proper that we insist on that.

This action will not lessen the need to encourage other nations to subscribe to the strictures of the MTCR. It is worth the hard work it will surely take to sign up any country which can produce and is willing to export these technologies. Neither will this effort altogether change the strategic context that the accumulation of the spectrum of advanced weaponry has created in a given region.

Yet, in this respect, I think ballistic missiles are fundamentally different from advanced aircraft and other such advanced weaponry, especially as their range increases.

Nor does this kind of approach address the overall security problems these weapons exacerbate. There is no disputing that all enduring solutions to such problems are political and not technological in nature. Yet, within the context of managing problems until their political solutions can be achieved, this proposal is both doable and likely to be effective in achieving the limited objective of denying, for a time, ballistic missiles to some countries. In the greater scheme of things, that is not a bad start.

I just want to thank you very much for giving me the privilege of testifying today, Mr. Chairman, and I look forward to working with you on this issue and legislatively and any other fashion in the months ahead.

Senator BINGAMAN. Thank you very much for that testimony and for the work you have done on this issue. I did not have questions for Senator DeConcini or Congressman Berman myself. Let me call on the other members of the committee to see if they have some specific questions they would like to put to the witnesses. Senator Byrd, did you have questions for either witness?

Senator BYRD. I do not have any questions, Mr. Chairman. I compliment Senator DeConcini and Congressman Berman on the excellent work and the fine leadership that they are demonstrating in this area.

I think it is an exceedingly important matter to all of us and a matter of tremendous concern that countries like these who should be spending their limited resources on economic development are instead spending them to acquire the most advanced weapons. These weapons can only contribute to the instability of the area. It truly is frightening.

It is a little bit like so many of our people who could very well suffice with a .38 Smith & Wesson in their homes, to protect their family and property, who want to go out and get AK-47s.

I think these gentlemen are to be congratulated, and I congratulate you, Senator Bingaman, for conducting these hearings. I feel that Senator DeConcini is on to something that is quite important. This is a new administration, and in his campaign, Mr. Bush indicated his concern with regard to this issue.

I could safely say that we are all concerned, Republicans and Democrats, in the executive as well as in the legislative branch. Senator DeConcini, I look forward to the report and the results of the study that you have requested from the General Accounting Office, and I believe that the new office you are proposing is an excellent idea.

Perhaps it should be required to come up with a comprehensive plan within the next 60 or 90 days and report back to Congress. Do you think that might be a good idea?

Senator DeConcini. Mr. Chairman and Senator Byrd, I think that would be a good idea to get the administration to focus on it and devote the resources in the State Department to make some recommendations to us so we know where they are. I think that is a very good idea.

As the Senator from West Virginia knows, we are working with his staff, and I appreciate his interest in this subject matter and the time that his staff has put in, and I look forward to working with you, Senator Byrd, on such language that we might propose to the Secretary.

Senator Byrd. Well, I think it is good that we know where we are and where we are going and how we are going to get there. I am grateful for the leadership that you are demonstrating in this area, Senator DeConcini. You have been doing so for quite some time and I am happy to join with you and cooperate as best I can. Thank you, Mr. Bingaman.

Senator Bingaman. Certainly, Senator McCain, did you have any questions for either of the witnesses?

Senator McCain. No, thank you, Mr. Chairman. I appreciate the commitment and involvement of both witnesses. My friend and colleague from Arizona and my former colleague, Congressman Berman, for their long commitment and concern on this issue, and I have some optimism that perhaps we can adequately address this severe threat to world peace. Thank you, Mr. Chairman.

Senator Bingaman. Well, thank you very much, and thank you both for testifying today. Let me call forward the second panel, which is H. Allen Holmes, the Assistant Secretary for Politico-Military Affairs in the Department of State, and Jim E. Hinds, who is the Deputy Assistant Secretary of Defense for Negotiation Policy.

I am advised there are also representatives here from the Department of Commerce who are not planning to testify but are here. Is that accurate? Could you just identify yourselves?

Mr. **Clements**. Mr. Chairman, I am William Clements. I am acting director of the Office of Technology and Policy Analysis in the Bureau of Export Administration.

Senator **Bingaman**. Thank you. We appreciate your being here very much. Mr. Holmes, go right ahead and we will hear both from you and from Mr. Hinds and then have some questions for you.

STATEMENT OF AMBASSADOR H. ALLEN HOLMES, ASSISTANT SECRETARY OF STATE, POLITICO-MILITARY AFFAIRS

Ambassador **Holmes**. Thank you, Mr. Chairman. Before I begin, I would just like to say that I appreciate it very much. I thought the excellent comments that were made by Senator DeConcini and Congressman Berman on the magnitude of this problem that is the subject of this hearing and which faces our country.

I would like to thank you in particular, Mr. Chairman, for the opportunity to testify before you on current U.S. missile non-proliferation policy. I have a short statement.

The United States has been actively engaged in efforts to slow the proliferation of destabilizing, nuclear-capable missile systems for nearly 8 years. Early in this effort, it became clear that missile proliferation was a global problem which required wide-ranging bilateral and multi-lateral responses.

Our initial approach to the problem was, as you are aware, the Missile Technology Control Regime. Established in April 1987, the MTCR is a voluntary export control regime coordinated with our Economic Summit Seven partners. The controls established in the MTCR apply to all missile systems which exceed the 300-kilometer range and 500-kilo payload thresholds established in the Technical Annex.

The MTCR was crafted in the early years of this decade by nations sharing a common goal and with a common understanding of how we should begin addressing the matter of Third World missile proliferation.

Multi-lateral export control policies are complex, and differences in national laws, regulations, policies and interpretations can limit their effectiveness. Such differences arise, in the case of the MTCR, particularly in the areas of the applicability of regime controls to countries which are not seeking to develop nuclear weapons, or, second, which are seeking to develop civilian space-launch vehicles.

In the former instance, the application of regime controls may not be uniform among all the partners. Regarding the latter case, some countries may be developing space-launch vehicles for truly civilian purposes. Because of the similarities in rocket booster technology, exporting to the civilian program without assisting a nearby military project, and thereby undercutting the MTCR goals, may be difficult.

However, even more significant are external constraints on regime effectiveness. Several Third World countries, for example, seeking missile capability, are relatively advanced in technological areas key to missile design and construction. India and Israel and others have the independent technological capability to construct large rockets. In such cases, export control regimes have limited effectiveness.

The MTCR, however, has had an impact on some programs, particularly those which rely substantially on the import of foreign technology. The Argentine-Egyptian-Iraqi Condor II, for example, is far behind schedule. And we believe this can be traced to problems in acquiring technology from MTCR adherents. Even other programs, such as in Brazil, have, by their own admission, been delayed by the MTCR.

Recognizing that the regime is a useful but limited tool, beginning last year, the United States initiated other supplemental approaches to the problem. The administration's policy on missile non-proliferation is under overall review at this time. The policies I will describe, therefore, are those which are already in place. I believe that the broad lines of the administration's policy will continue to encompass similar key features.

Regardless of whether they decide to adhere to the MTCR, we believe that the support of the Soviet Union for missile non-proliferation efforts is essential. Accordingly, we have held discussions with the Soviets on missile proliferation and will continue a regular dialogue.

Second, China is an important supplier of missile systems, and, to a smaller extent, of missile technology. In nearly all of our high-level contacts with the PRC in 1988 and so far in 1989, we have stressed the dangers of missile proliferation and sought Chinese restraint in their export programs.

We believe that the Chinese understand our concerns and hope they will show restraint in transfers of missiles and technology covered by the MTCR.

We have also initiated direct bilateral contacts with Third World countries engaged in missile development projects to underline our concerns and to begin a process which we hope will lead to a realization that regional stability, especially in volatile areas, is undermined by the acquisition of fast, increasingly accurate missiles that cannot be recalled once fired.

Last, we are studying the possibilities of broad regional approaches to the problem of missile proliferation and have taken preliminary steps in this direction.

In the approaches I have described above, we are not trying to go it alone. In most cases, we are seeking the help of other countries which share our concerns about missile proliferation, including the adherents to the MTCR.

I hope that this will be a useful orientation to the current state of play in U.S. missile non-proliferation policy. While the lion's share of public attention has gone to the MTCR, we continue to press forward on other initiatives which are required for a comprehensive response to missile proliferation. Thank you.

Senator **BINGAMAN**. Thank you very much. Now let us hear from Mr. Jim E. Hinds, the Deputy Assistant Secretary of Defense for Negotiations Policy. We are very pleased to have you here today.

STATEMENT OF JIM E. HINDS, DEPUTY ASSISTANT SECRETARY OF DEFENSE, NEGOTIATIONS POLICY

Mr. **Hinds**. Thank you, Mr. Chairman. I am pleased to be here. I am actually encouraged by the attention that your committee is showing, and I think that that is essential for a successful policy. I have a somewhat longer prepared statement which I would like simply to enter into the record and perhaps address much less formally the Department of Defense perspective on the question of missile proliferation.

Senator **Bingaman**. That is fine. We will include your entire statement in the record.

Mr. **Hinds**. I think, specifically, that I should talk about some of the military implications which have already been covered to a certain extent in the general discussion of missile proliferation. And I understand that there is an interest in hearing something about the way the Department of Defense is organized and how we handle this question. So I would like to cover those two points.

First of all, I think I could probably say that the Department of Defense has more people who are worrying about this particular question than the rest of the Government combined. But we worry about many aspects of the problem, sometimes simultaneously and sometimes sequentially, sometimes, at the beginning of the discovery or the anticipation of a threat, without one part of the building knowing what the other part is doing. Therefore, our biggest job is in organizing and coordinating all of these various approaches.

First of all, I think that, when a new threat is anticipated, expected or discovered, our first tendency is usually to think about defense; that is, active and passive measures that can be taken to protect our own forces and to counter or eliminate the effect of the threat. Of course, sometimes the most important aspect from the Department of Defense's viewpoint is deterrence from use of the threat. We think that is a moral position; sometimes this leads us with certain kinds of technologies or weapons, to rely upon the threat of retaliation in kind, for example.

But, at the same time, we in the Department of Defense sometimes like to take credit for having invented the term "missile nonproliferation." For many years, we talked about nuclear proliferation. It has not been until quite recently that it has become more common to talk about missile proliferation, chemical weapons proliferation, and we hear now a bit about biological weapons proliferation.

And I think if we begin to think in those kinds of terms, we will take a more coherent approach to the threat, which can have, of course, severe military implications.

I would like to say that not all "proliferation" is bad from our perspective. I think, in a certain sense, I would echo Senator Wallop's statements, that I would probably express in the following terms: technology, in itself, is not inherently evil. It can, however, be a destabilizing threat. But often it is just as necessary to protect our ability to transfer the same technology or the same kinds of technology or similar technologies to our friends in the interest of stability.

I think that we, at least in my office, think of our job as slowing the dangerous spread of technologies, specifically of missile technology or missiles. Prevention is probably a somewhat overly enthusiastic and misleading term in this case. But, in any case, we think of our task as slowing the dangerous spread of activities. And, from our perspective, what we are hoping to do is to prevent the threat from exceeding our defensive capabilities.

Of course, there is a lot of competition for resources, as we all know. And we, therefore, talk about slowing the proliferation of threatening technologies, of threatening weapons systems, in order to give ourselves more time to perfect the other measures, active and passive defensive measures; of course, that includes also more time for diplomacy, for regional understanding and so forth to work.

I think the military implication, however, of the spread of missile technology is quite clear. The pace and destructiveness of regional wars can be increased considerably, and, that, of course, can prevent a rational sort of approach to a regional problem. It can prevent our diplomatic activities, our assistance. It can actually prevent our protection of our citizens and soldiers who might be in the area or ultimately committed to the area.

I think what I am saying is that the next Iran-Iraq war might last months as opposed to years, or it might last days, depending upon the nature of the threat as it develops.

And, in addition to the speed, again, from a defense perspective, we think that our forces and our friends' forces, as well as our citizens, may all be much more vulnerable without the ability to slow the pace, to establish our defenses, and to take other actions that are necessary.

All of this kind of threat has a very serious immediate implication, that is, that it drives up the cost of protecting our interests. It drives up the costs of the projection of our forces and of our influence.

Again, to say something about how we are working on this problem in the Department of Defense, I said first of all that I claim some credit for having invented the term "missile proliferation." That was, actually, long before my time and before it became popular to talk about it in that way. Our idea was, of course, that ballistic missiles were spreading rapidly, or, at least their design and programs. That meant that missiles were not far behind.

Military missile programs, as Ambassador Holmes has already stated, are relatively easy to hide behind scientific rocket or space launch programs, and, therefore, they present a very complicated problem. I also started out by saying that DOD has a lot of people engaged in talking about this particular question. We have many offices that are involved in one way or another, whether in intelligence-gathering or in taking account of the threat and the military implications of the proliferation of these kinds of weapons in other defensive ways.

My office, specifically, is responsible to the Under Secretary of Defense for Policy for coordinating the work of all of these organizations with regard to missile proliferation policies. And my office is also responsible for working with other government agencies.

We think of our job as dealing with the threat of missile proliferation from the military and strategic perspective; again, primarily involving the questions of defense, active and passive defensive measures. We think of our job as providing the technical assessments regarding missile-related technology and programs, and we have, of course, a very large body of experts and technicians to draw upon in this field.

Again, referring to my office specifically, we are responsible also for seeing that government-to-government defense cooperation programs are coordinated with the requirements of our missile-non-proliferation policies—in particular the Missile Technology Control Regime; and, finally, we try to integrate the technical, intelligence, and policy aspects of non-proliferation policies.

We think that we have developed a relatively organized relationship among the services, the joint staff, Acquisition and other organizations within the Defense Department. That has not been an easy or a fast process, I would add.

We are not at a point where I think that we are able to give each case much more attention and to spend greater effort in analyzing each of these cases. We are doing fairly well on improving the information flow, especially to the services and others who are involved with international defense programs.

We have good coordination established with the people who do license processing and referrals. I would say that there are still rough spots, but overall, the process is improving, which is partly the result of the seriousness with which our leaders have taken this issue.

In my own office, for example, I have a nuclear non-proliferation directorate which has also become the missile non-proliferation office. I can look back as little as 6 months ago when I had, really, one single dedicated professional working full-time on missile non-proliferation. We now have a much larger office, and, while the office pays attention to nuclear non-proliferation issues and to other issues as well, we have at least four people working full-time on missile non-proliferation issues.

It is still a small office, and we can still use help in coordinating all of these different efforts, but I think that we have improved our efforts significantly.

We are thinking now about missile proliferation as almost an automatic way of looking at exports and looking at the problems.

The problem with missile proliferation has to be looked at also in a much broader aspect, including the ways in which Ambassador Holmes has mentioned.

I think also that you should not be surprised to hear talk about other kinds of technologies that we may want to worry about in the future, that we are worrying about now, and that, in fact, we are applying export controls to, but that it is not yet popular to talk about. I am not sure what all those may be, but, of course, we worry about the transfer of things like sophisticated technology for improved command and control and intelligence.

There are many technologies that may, in the future, be heard referred to in terms of proliferatiòn efforts. I think it is a good way, from our perspective in the Defense Department, to think about the problem. It broadens our horizon somewhat from just thinking about protective measures, or from defensive measures.

And I think with that I will stop. Thank you very much.

[The statement of Mr. Hinds follows:]

STATEMENT OF MR. JIM E. HINDS

DEPUTY ASSISTANT SECRETARY OF DEFENSE

(NEGOTIATIONS POLICY)

MR. CHAIRMAN:

THANK YOU FOR INVITING ME HERE TODAY TO TALK ABOUT ONE OF THE MORE SERIOUS AND GROWING PROBLEMS FACING US TODAY -- THE THREAT OF MISSILE PROLIFERATION. THE PARTICIPATION OF CONGRESS, THE EXECUTIVE, AND THE ACADEMIC SECTOR UNDERSCORES, I THINK, THE GRAVITY OF THE SITUATION AND THE DESIRE TO FIND SOLUTIONS TO THIS EXTREMELY COMPLEX PROBLEM. I AM PLEASED TO HAVE THIS OPPORTUNITY TO DISCUSS IT WITH YOU.

THE NATURE OF THE THREAT

A YEAR AGO, WHEN THE PEOPLE'S REPUBLIC OF CHINA EXPORTED CSS-2 MISSILES TO SAUDI ARABIA, AND WHEN IRAN AND IRAQ USED MISSILES IN THE "WAR OF THE CITIES," THE UNITED STATES PUBLIC AWOKE TO THE REALIZATION THAT IT CANNOT TURN ITS BACK ON MISSILE PROLIFERATION.

BALLISTIC MISSILES -- RELATIVELY EXPENSIVE AND RELATIVELY DIFFICULT TO ACQUIRE -- ARE SPREADING THROUGHOUT THE THIRD WORLD. THE PROBLEM IS TWOFOLD: ACQUISITION AND SALE. SOME THIRD WORLD COUNTRIES SEEM ONLY TO BE INTERESTED IN ACQUIRING MISSILE CAPABILITIES PRIMARILY AS A REACTION TO EVENTS AROUND THEM. THIS IS ESPECIALLY TRUE IN SOUTH ASIA AND THE MIDDLE EAST WHERE EXTENDED-RANGE MISSILES ARE PARTICULARLY TROUBLING. OTHERS ARE INTERESTED IN THE CAPABILITY LESS FOR THEMSELVES AND MORE AS ARMS EXPORTS, AN ACTIVITY THAT FOR OBVIOUS REASONS IS EXTREMELY WORRISOME.

BALLISTIC MISSILES ARE NOT THE ONLY THREAT, HOWEVER. CRUISE MISSILES ARE GENERALLY CHEAPER AND WILL BECOME MORE AVAILABLE. AS THE HARDWARE FOR LARGE, UNMANNED AIRCRAFT AND MORE ACCURATE GUIDANCE SYSTEMS BECOMES INCREASINGLY WIDESPREAD, WE WILL BE FACED WITH A NEW KIND OF THREAT.

THE MISSILE PROLIFERATION ISSUE IS MAGNIFIED BY THREE ADDITIONAL PROBLEMS. ONE IS THE CURRENT RELATIVE INACCURACY OF MISSILES; THIS MAKES THEM ESPECIALLY SUITED AS TERROR WEAPONS RIGHT NOW. SECOND IS THE PROLIFERATION OF MASS DESTRUCTION PAYLOADS -- CHEMICAL, BIOLOGICAL, AND NUCLEAR. FOR CURRENTLY INACCURATE MISSILES, THESE ARE THE ONLY MILITARILY EFFECTIVE PAYLOADS. THIRD IS THE EXTENT TO WHICH SOME MISSILE PROGRAMS CAN BE PURSUED UNDER COVER OF OTHER ACTIVITIES. THE MAIN EXAMPLE IS SPACE LAUNCH VEHICLES, THE TECHNOLOGY AND STAGES OF WHICH ARE INTERCHANGEABLE WITH THOSE OF BALLISTIC MISSILES. FOR THIS REASON, OUR POLICY CONTROLS BOTH BALLISTIC AND SPACE LAUNCH SYSTEMS IDENTICALLY, AND THE CAREFUL ANALYSIS OF END USES IS A KEY PART OF OUR ACTIVITIES.

COPING WITH THE THREAT

FOR THE LAST THIRTY YEARS, MAJOR INDUSTRIALIZED NATIONS HAVE WORKED TO CONTROL THE SPREAD OF NUCLEAR WEAPONS. FOR MORE THAN SIX YEARS, SOME OF THOSE SAME NATIONS HAVE BEEN ENGAGED IN EFFORTS TO ADDRESS ANOTHER THREAT, THAT OF MISSILES CAPABLE OF DELIVERING NUCLEAR WEAPONS. THE CULMINATION OF OUR EFFORTS CAME TWO YEARS AGO LAST MONTH, WHEN THE SEVEN ECONOMIC SUMMIT NATIONS -- CANADA, FRANCE, THE FEDERAL REPUBLIC OF GERMANY, ITALY, JAPAN, THE UNITED KINGDOM, AND THE UNITED STATES -- ANNOUNCED IDENTICAL, BUT SEPARATE, NATIONAL POLICIES TO LIMIT THE PROLIFERATION OF NUCLEAR-CAPABLE MISSILES. THE POLICY AND ITS IMPLEMENTING ACTIONS ARE CALLED THE MISSILE TECHNOLOGY CONTROL REGIME, OR MTCR. THE

MTCR APPLIES TO ANY UNMANNED DELIVERY SYSTEM -- INCLUDING BALLISTIC AND CRUISE MISSILES -- WHICH CAN CARRY A 500 KILOGRAM PAYLOAD A DISTANCE OF 300 KILOMETERS.

THE MTCR IS A SET OF EXPORT CONTROL PRINCIPLES AS WELL AS A NON-PROLIFERATION POLICY. IT SETS FORTH TWO CATEGORIES OF EQUIPMENT AND TECHNOLOGY TO BE CONTROLLED. THE REGIME ESTABLISHES A STRONG PRESUMPTION OF DENIAL WITH RESPECT TO CATEGORY I ITEMS, THAT IS, COMPLETE ROCKETS AND MISSILES, THEIR MAJOR SUBSYSTEMS, AND PRODUCTION EQUIPMENT AND TECHNOLOGY. CATEGORY II ITEMS, THOSE COMPONENTS WHICH MAKE UP THE CATEGORY I SYSTEMS, ARE TREATED ON A CASE-BY-CASE BASIS. THEY ARE GENERALLY APPROVED FOR EXPORT. HOWEVER, IF THEY ARE DESTINED FOR A SPECIFIC MISSILE OR ROCKET PROJECT THAT CONCERNS US, THEY ARE LIKELY TO BE DENIED. IF THEY COULD CONTRIBUTE TO A SO-CALLED PROJECT OF CONCERN, THEIR TRANSFER MIGHT BE DENIED BUT, IF APPROVED, THE TRANSFER AT LEAST WILL REQUIRE GOVERNMENT-TO-GOVERNMENT ASSURANCES AS TO THE END USE AND END USER.

THE MTCR IS UNIQUE IN ITS STRUCTURE. FOR THE FIRST TIME IN A NON-PROLIFERATION REGIME, THE SUPPLIER GOVERNMENT, AND NOT JUST THE RECIPIENT GOVERNMENT, MUST TAKE RESPONSIBILITY FOR THE SENSITIVE ITEM'S END USE. AS PART OF THIS RESPONSIBILITY, GOVERNMENT ASSURANCES ARE OBTAINED IF THERE IS ANY DOUBT ABOUT THE USE OF THE ITEM TO BE TRANSFERRED. IN THE RARE INSTANCES WHERE A CATEGORY I ITEM IS APPROVED, THE SUPPLIER GOVERNMENT MUST OBTAIN "BINDING ...UNDERTAKINGS" FROM THE RECIPIENT GOVERNMENT, AND THE SUPPLIER MUST SEE THAT ALL NECESSARY STEPS HAVE BEEN TAKEN TO ENSURE THE END USE.

THE MTCR IS A CRITICAL ELEMENT OF OUR NON-PROLIFERATION POLICY. THIS ADMINISTRATION STRONGLY BELIEVES WE SHOULD CONTINUE TO SUPPORT IT. THAT SEVEN NATIONS HAVE AGREED ON A COMMON POLICY

INDICATES THE SERIOUSNESS WITH WHICH THIS MATTER IS VIEWED.

WE NOW HAVE TWO YEARS OF EXPERIENCE WITH THE REGIME, SO THIS IS A PROPITIOUS TIME TO REVIEW OUR POLICY. ON THE WHOLE, I BELIEVE THE REGIME HAS PLAYED A CONSTRUCTIVE ROLE IN LIMITING MISSILE PROLIFERATION. THROUGH A COMBINATION OF EXPORT CONTROLS, DEMARCHES TO FOREIGN GOVERNMENTS, AND BILATERAL AND MULTILATERAL DISCUSSIONS WITH OUR MTCR PARTNERS, THE MTCR HAS HAD A SIGNIFICANT IMPACT IN SLOWING DOWN KEY MISSILE PROJECTS.

WE RECOGNIZE THAT THE MTCR IS NOT PERFECT, HOWEVER. THE SOVIETS AND THE CHINESE HAVE NOT SIGNED UP TO IT, AND WE NEED THEIR RESTRAINT WITHIN OR OUTSIDE OF THE REGIME. FURTHERMORE, AS MY COLLEAGUE POINTS OUT, EXPORT CONTROLS CAN HAVE A VARYING EFFECT DEPENDING ON HOW THEY ARE IMPLEMENTED WITHIN EACH COUNTRY.

NEVERTHELESS, THERE ARE WAYS TO IMPROVE THE IMPLEMENTATION OF THE MTCR. WE WILL BE EXAMINING THESE POSSIBILITIES, AS WELL AS CONSIDERING OTHER MISSILE NON-PROLIFERATION MEASURES, IN THE ADMINISTRATION'S NON-PROLIFERATION REVIEW. AT THIS POINT, SUFFICE IT TO SAY THAT ALL OUR EFFORTS MUST BE MUTUALLY COMPLEMENTARY. UNILATERAL MEASURES SUCH AS EXPORT CONTROLS, AND INTERNATIONAL MEASURES SUCH AS DISCUSSIONS WITH FOREIGN GOVERNMENTS, MUST WORK TOGETHER.

I WOULD NEXT LIKE TO ADDRESS WHERE THE DEFENSE DEPARTMENT STANDS IN THE FIGHT AGAINST MISSILE PROLIFERATION.

THE DEPARTMENT OF DEFENSE'S (DOD) ROLE IN MISSILE PROLIFERATION

THE DEPARTMENT OF DEFENSE IS AN ESSENTIAL PLAYER IN THE MISSILE NON-PROLIFERATION PROCESS. DOD SIGNIFICANTLY CONTRIBUTED TO THE MTCR CONCEPT AND NEGOTIATIONS AND IS ACTIVELY INVOLVED IN

MTCR IMPLEMENTATION. DOD'S WIDE-RANGING RESPONSIBILITIES TO HELP LIMIT MISSILE PROLIFERATION INCLUDE: (1) DEALING WITH THE THREAT FROM A MILITARY AND STRATEGIC PERSPECTIVE; (2) PROVIDING TECHNICAL ASSESSMENTS REGARDING MISSILE PROLIFERATION; (3) COORDINATING GOVERNMENT-TO-GOVERNMENT DEFENSE COOPERATION WITH OUR MISSILE NON-PROLIFERATION POLICY; AND (4) INTEGRATING, AS PART OF THE INTERAGENCY PROCESS, THE TECHNICAL, INTELLIGENCE, AND POLICY ASPECTS OF MISSILE NON-PROLIFERATION. I WILL SPEAK TO EACH IN TURN.

FIRST, DOD IS ULTIMATELY RESPONSIBLE FOR DEALING WITH THE THREAT FROM A MILITARY AND STRATEGIC PERSPECTIVE. WITH OR WITHOUT AN MTCR, DOD MUST COLLECT AND ANALYZE INTELLIGENCE, PARTICIPATE IN THE FORMULATION OF POLICY TOWARD ANY THREATS, AND ENSURE THAT OUR MILITARY FORCES ARE PREPARED TO DEAL WITH SUCH THREATS.

SECOND, BECAUSE OF THE EXPERTISE AVAILABLE TO IT, DOD ALSO PROVIDES TECHNICAL ASSESSMENTS REGARDING MISSILE PROLIFERATION. DOD HAS THE LARGEST POOL OF EXPERTISE IN THE U.S. GOVERNMENT WITH RESPECT TO MISSILE TECHNOLOGY. DOD MUST USE THIS EXPERTISE IN REVIEWING PRIVATE SECTOR EXPORTS AND GOVERNMENT-TO-GOVERNMENT COOPERATION THAT MIGHT CONTRIBUTE TO MISSILE PROLIFERATION, IN REVIEWING THE TECHNICAL ASPECTS OF INTELLIGENCE ON THE MISSILE PROLIFERATION THREAT, AND IN ENSURING THAT OUR DIPLOMATIC COMMUNICATIONS ON THE SUBJECT OF MISSILE PROLIFERATION ARE ON SOUND TECHNICAL GROUND.

THIRD, DOD MANAGES DEFENSE COOPERATION WITH SCORES OF FRIENDLY NATIONS; THE MANAGERS OF THIS COOPERATION RESIDE IN DOZENS OF OFFICES, LABORATORIES, AND COMMANDS IN THE SERVICES AND THE OFFICE OF THE SECRETARY OF DEFENSE. DOD OVERSIGHT OF THE MISSILE TECHNOLOGY ASPECTS OF THIS COOPERATION, CONTRIBUTES TO OUR CONTROL OVER THE SPREAD OF NUCLEAR-CAPABLE MISSILES.

FINALLY, DOD PLAYS A SIGNIFICANT ROLE IN THE INTERAGENCY PROCESS WITH RESPECT TO INTEGRATING THE TECHNICAL, INTELLIGENCE, AND POLICY ASPECTS OF MISSILE NON-PROLIFERATION.

DOD'S PERFORMANCE OF THESE FUNCTIONS INVOLVES COORDINATION AMONG NUMEROUS OFFICES BOTH WITHIN AND OUTSIDE OF THE OFFICE OF THE SECRETARY OF DEFENSE (OSD). OSD, AND, SPECIFICALLY, THE OFFICE OF THE UNDER SECRETARY OF DEFENSE FOR POLICY (OUSDP), IS RESPONSIBLE FOR MISSILE NON-PROLIFERATION POLICY AS IT AFFECTS THIS NATION'S SECURITY. WITHIN OUSDP, MY ROLE AS DEPUTY ASSISTANT SECRETARY OF DEFENSE FOR NEGOTIATIONS POLICY (AND, UNDER ME, THE DIRECTORATE OF NON-PROLIFERATION POLICY) IS TO OVERSEE AND IMPLEMENT THE FUNCTIONS I PREVIOUSLY MENTIONED.

MY OFFICE MUST COORDINATE WITH NUMEROUS OTHER OFFICES: THE UNDER SECRETARY OF DEFENSE FOR ACQUISITION (ON INTERNATIONAL COOPERATIVE DEFENSE PROGRAMS); THE REGIONAL DESKS WITHIN THE OFFICE OF THE ASSISTANT SECRETARY OF DEFENSE FOR INTERNATIONAL SECURITY AFFAIRS (ON COUNTRY-SPECIFIC QUESTIONS); THE JOINT CHIEFS OF STAFF AND THE SERVICES (ON MILITARY AND STRATEGIC CONCERNS); THE DEFENSE TECHNOLOGY SECURITY ADMINISTRATION (ON EXPORT LICENSE APPLICATIONS); THE DEFENSE SECURITY ASSISTANCE AGENCY (ON FOREIGN MILITARY SALES); AND, THE DEFENSE INTELLIGENCE AGENCY (ON INTELLIGENCE SUPPORT). IN ADDITION, WE DRAW ON THE NON-PROLIFERATION EXPERTISE OF THE NATIONAL WEAPONS LABORATORIES TO PERFORM OUR WORK.

HOW WELL ARE WE DOING OUR JOB? OVER THE YEARS, WE HAVE DEVELOPED A MORE ORGANIZED RELATIONSHIP WITH THE DEFENSE COMPONENTS I JUST MENTIONED. WE ARE GIVING EACH EXPORT CASE MORE INDIVIDUAL ATTENTION AND ANALYZING MORE CAREFULLY WHICH CASES SHOULD BE

APPROVED OR DENIED. WE INITIATED A PROGRAM TO EDUCATE THE NON-TECHNICAL INTERAGENCY COMMUNITY AND THE MTCR PARTNERS ABOUT THE TECHNICAL ISSUES INVOLVED IN MISSILE TECHNOLOGY CONTROL. WE ARE TAKING STEPS TO IMPROVE THE INFORMATION FLOW TO THE SERVICES, PARTICULARLY WHERE OUR INTERNATIONAL COOPERATIVE DEFENSE PROGRAMS APPLY.

OUR WORK IS IMPROVING, IN LARGE MEASURE DUE TO THE INCREASED NUMBER OF STAFF WITHIN THE OFFICE OF THE SECRETARY OF DEFENSE. UP UNTIL SIX MONTHS AGO, WE HAD ONLY ONE FULL-TIME PROFESSIONAL DEDICATED TO MISSILE NON-PROLIFERATION ISSUES. WE NOW HAVE FOUR.

THE RESOURCE SITUATION WITHIN DOD IS STILL NOT PERFECT, ALTHOUGH IT HAS CERTAINLY IMPROVED. THE WORK OF MISSILE PROLIFERATION, AND, SPECIFICALLY, THE WORK OF EXPORT CONTROLS, IS LABOR-INTENSIVE. INTELLIGENCE IS A KEY COMPONENT BUT, UNFORTUNATELY, IS OFTEN OVERLOOKED IN TERMS OF THE RESOURCES DEVOTED TO IT. COORDINATION, BOTH INTER- AND INTRA-AGENCY, IS COMPLEX AND TIME-CONSUMING, BUT, OF COURSE, CRITICAL. WE ARE WORKING CONTINUOUSLY TO MAKE THE OVERALL PROCESS A MORE EFFECTIVE ONE.

THANK YOU.

Senator BINGAMAN. Thank you very much.

We will be under the 6-minute rule for questions. I will start, and then proceed to the other members for questions that they have. We will have another round if we need one.

Secretary Holmes, I gather several MTCR members take the position that the export controls in the missile technology control regime apply only to countries with nuclear warheads, or nuclear capability.

They argue that the Chinese sale of the CSS-2 to the Saudis was exempt from MTCR export controls, because the Saudis do not have a nuclear capability.

In your view, what actions do we need to take to convince members to apply export controls to all missiles with a range of 300 kilometers, and all missile technology, regardless of the nuclear capability of the recipient?

Mr. HOLMES. Mr. Chairman, you put your finger on an important challenge before us. It is true that when this regime was put together it was seen as a way of reinforcing the non-proliferation treaty, and to deal with the question of nuclear proliferation, not just with the technologies and the warheads, but the delivery systems as well.

And it is true that there is a difference of view among members as to whether in considering an export application, if a country is not a nuclear country, or is not developing a nuclear warhead, or is not intending to transfer to a country that is engaged in that kind of activity, that it would perhaps be allowed to receive the technology, or be considered at least for that.

I think now, though, as a result of the attention to chemical warfare and the dangers involved there—the Iran/Iraq war, the use of chemical weapons there against the Kurds, the public cautiousness that has now been raised world wide about this problem, including, after the Paris Conference in January, that our partners are rethinking this issue.

And it is something that we need, and we are talking to them, and we will be talking to them increasingly about a range of improvements to the Missile Technology Control Regime, including this point of applying the restrictions to countries that, for example, are developing chemical warheads, as well as nuclear.

So this is an important subject, and one that is under review by the administration as it looks at the policy, and one that we will be engaging our partners in increasingly.

Senator BINGAMAN. Let me be sure I understand your response. I was under the impression that our administration believed that the Missile Technology Control Regime did cover transfer of this technology to countries without nuclear capability, and that some of the other countries that are involved take a different view. Am I right that we have a basic difference of opinion on this, or do we believe that it is ambiguous?

Mr. HOLMES. It is ambiguous in terms of the original concept that guided the negotiation of the Missile Technology Control Regime. But we interpret it in the most restrictive way, and we are concerned in the U.S. Government by the development of, for example, chemical warheads. So we would not license to countries that are producing, or interested in producing, either chemical or nuclear warheads.

We have taken that interpretation, and that is U.S. policy. But it varies from country to country among the seven.

Senator BINGAMAN. But if that is our interpretation of it, then we believe that any country that takes a different interpretation is, in fact, violating?

Mr. HOLMES. No. That is not true, because this is not a treaty, Mr. Chairman. It is not even a government agreement. This is a gentlemen's agreement among seven countries that apply national policies that—at the time that it was negotiated, there was agreement upon how that should be applied.

But if a country has not chosen to interpret this to apply to countries other than those of nuclear concern, that is not a violation. That is something that needs to be worked on together in a cooperative way, to try to bring everybody to agree on the increased danger presented by other systems, such as chemical warheads. And so it is not really, technically, a violation.

Senator BINGAMAN. But you do believe that a new revision of this Missile Technology Control Regime is required in order to establish, for the understanding of all concerned, that, in fact, transfers to non-nuclear powers is also to be prohibited.

Mr. HOLMES. Yes. We certainly advocate that the extension of the applicability of the Regime, and we are, and will continue to talk with our partners on that question.

Senator BINGAMAN. In your view, should we involve in the MTCR all European economic community members, particularly since we are moving toward 1992 with the trade integration that is going to take place there? And what, in practical terms, do you see that the administration can do to bring those other countries into the MTCR?

Mr. HOLMES. Actually, when we announced the Regime in April 1987, the press release made clear that it was open to all countries that wished to adhere. And we are in favor of the other members of the European community joining this Regime.

It is clear that there are technologies that are produced in those countries. And as a matter of fact, our European partners in the Regime are even more interested in this than we are. And they are concerned that there be a unified group applying these principles at the time that the unified market comes into effect in 1992. And so I think there is widespread agreement that we need to move in this direction.

Senator BINGAMAN. My time is expired. Senator Wallop.

Senator WALLOP. We might be as governments in agreement, but we would be hard pressed to lay claim to the fact that Germany, either as a government, or as the people of that government, has performed under it.

Mr. HOLMES. I am sorry. What is your question, Senator?

Senator WALLOP. Would we not be hard pressed to claim that Germany has been cooperative as you suggested all of the European governments were, in controlling the other non-nuclear technologies that might be applied? Whether it is to missile proliferation, or just chemical weapons?

Mr. HOLMES. Well, my impression is that as of today, that the German government is very serious about applying the Missile Technology Control Regime. It is, in fact, carrying out an investigation at this time of one of their companies that apparently, or is alleged to have violated their own export control laws in the application of the Missile Technology Control Regime.

And we have the impression that this is a very serious endeavor. And we have talked to them about it. And we are looking forward to the results of their investigation.

Senator WALLOP. In the Times, a recent article in the "Inside the Pentagon," column was discussed the missile guidance opportunities for the Third World of the Global Positioning Satellite. What measures are DOD taking to deny this opportunity?

Mr. HINDS. Senator, this may be too much of an insider Inside the Pentagon article for me to know precisely which particular case we are talking about.

But, by the way, I do believe that that is a serious problem, and that it is especially serious as regards, in my opinion, at least, the development of cruise missiles in the future. It is a problem that we take very seriously and examine licenses, applications, the intelligence, and so forth, routinely. And I would say quite intensively.

Senator **WALLOP**. Would you be good enough to, perhaps, supply a little more fuller, or a little more complete answer in writing, because I realize that there may be a variety of problems.

Mr. **HINDS**. I just do not want to be talking about the wrong issue at the time. I would much prefer to provide a fuller answer in writing.

[The information follows:]

As the article depicts, DOD is certainly concerned about the cruise missile proliferation threat and its relationship to the U.S. Global Positioning System (GPS). To address this concern, we will have the capability of degrading the commercial GPS signal during periods of emergency. My staff is working with DOD's GPS staff (and the relevant staff from other agencies) to study other possible measures.

As background, the Deputy Secretary of Defense approved DOD's policy on GPS in May 1983. The policy authorizes the availability of the commercial grade GPS throughout the world for use by any potential user. It states DOD's intent to provide the highest possible commercial code accuracy consistent with U.S. national security considerations. That accuracy is currently specified as 100 meters. Consistent with this policy and President Reagan's announcement in September 1983 that the GPS would be available on a worldwide basis for aviation safety, commercial grade GPS receivers capable of achieving the 100 meter accuracy are not controlled for export purposes.

While GPS receivers by themselves are not controlled, any missile, unmanned aerial vehicle (UAV), or guidance set intended for U.S. export is evaluated on a case-by-case basis by export licensing personnel in State and DOD. This process is well established and applies whether or not the item contains a GPS receiver. This export license control is currently the only mechanism available to deny Third World countries access to cruise missiles/UAVs with guidance based on the GPS system.

Senator **WALLOP**. Globalizing INF has been suggested as one way to limit the threat of missile proliferation. Does the Defense Department, and then the State Department have some views as to the pros and cons of this?

Mr. **HINDS**. Of course, I read Ken Adelman's article in the Washington Times recently——

Senator **WALLOP**. So, too, did the Soviets.

Mr. **HINDS**. I am sorry?

Senator **WALLOP**. So, too, did the Soviets.

Mr. **HINDS**. So, too, did the Soviets. I believe they have endorsed the idea. I would say that that is a possibility, or an option that will have to be considered in the review that is beginning now in the Bush administration. It would not be fair to not consider all problems—all options.

There are some problems that I, personally, can see with that idea, and I would like to see my own analysis considered in the review as it takes place. But I would not want to prejudice the outcome of it.

One of the problems that I see is—I think you were out of the room at the time when I made a statement in which I was very much in agreement with something that you had said earlier, although I probably expressed it differently.

I was saying that the technology itself is not evil. It is the use that is made of it that is worrisome. And in some cases we worry about the destabilizing proliferation, or the dangerous proliferation of certain technologies, at the same time that it may be very much in our interest to assist our friends and allies in developing the same kinds of technology for the purposes of stability.

So there are some cases in which I worry about aspects of how such a global ban might work. Obviously, if we have eliminated the weapons of our own in that category, it would be very difficult for us to object to others signing on to such an agreement. And I think that would probably be a positive thing.

As to whether that can be applied suitably in a missile proliferation kind of regime, I actually am somewhat skeptical and have some doubts about it. And I may be convinced otherwise in the course of the review that we will be undertaking.

Senator Wallop. Mr. Holmes.

Mr. Holmes. I would share a lot of those views. We certainly think it is an idea that is worth exploring. We will look at it in the policy review that is just beginning now. There are, obviously, some practical problems in applying that kind of a regime. Just to pick one obvious one—the cut off on range for the INF Treaty is 500 kilometers.

There are a lot of missiles below that range that cause particular problems for stability in the close quarters—for example, of the Middle East.

But, just to finish, it is something we think that is worth looking at.

Senator Wallop. Well, there are—I mean, not only at that—but you have seen as well, the missiles that fall into the category below that range. And with the assistance—I think of the French—was it not, to extend the range of the SCUD for the Iraqis, so that missiles which qualify as being legitimate, were legitimately outside the scope of the INF Treaty, have ranges within it, because of technical assistance from some of these MTCR countries.

Have we licensed—approved an export license for an MTCR-related item after April 16—that we have urged other members of the group not to export?

Mr. Holmes. I am not aware of any such license approval.

Senator Wallop. How about the ammonium perchlorate?

Mr. Holmes. Well, the ammonium perchlorate question is a complicated one.

Senator Wallop. Well, actually, my time is up, Mr. Secretary. Let me just say that the thrust of it was——

Mr. Holmes. I have found it. There was an ammonium perchlorate—is subject to the Arms Export Control Act controls. And it has been since 1984, when certain compounds that are used for rocket propellants were added to our munitions list in February 1988.

At that time, when Customs asked the State Department about this shipment, we confirmed that an export license was required, and that one had not been obtained. At the time it was not known that other officials had previously, erroneously advised the manfacturers that ammonium perchlorate did not require a license.

We think that the confusion on this question was due to the fact that prior to 1984, this substance was not on the munitions list, but was subject to commerce control.

We have corrected that error—that the shipment was seized and returned to the United States, and it has since been forfeited to the U.S. Government for falsification of shipping documents.

Senator Wallop. Thank you, Mr. Chairman.

Senator BINGAMAN. Senator McCain.

Senator McCAIN. Thank you, Mr. Chairman. I thank you for your courtesy in allowing me to sit in on this hearing today.

I would just like to make a couple of comments if I could, and then ask a couple of questions with the time that you have courteously allowed me, Mr. Chairman.

I think we have to deal with this problem of proliferation of weapons of mass destructions in an integrated manner.

We have to control both the weapons of mass destruction and the means of delivery.

The key weapons, as we know, are chemical, biological and nuclear, and the key delivery means are missile and aircraft.

The key associated technologies are range and testing equipment, warhead technology, and long-range targeting systems.

The Missile Control Regime is an essential part of dealing with the issue—although I do not think we can exaggerate the importance relative to the aircraft, or even smuggled use of some weapons.

I think when we consider legislation, Mr. Chairman, which I know we are, I think that we have got to include the following, and that is sanctions on sellers and buyers that create real barriers to U.S. aid in U.S. markets.

I note in passing that I only know of one country that is a recipient of U.S. aid that is involved in these violations.

I think we have to make the Missile Technology Control Regime a part of the Arms Export Control Act.

I think we need to establish a clear referral system for managing export licenses that gives DOD and DCI a clear role in examining implications for proliferation.

And I think we need to establish means for the executive branch to add items to Missile Technology Control Regime without delay.

I think we need reporting requirements that make covert sales and proliferation more difficult. I think we need to make it clear that research efforts are not space or chemical research, when that is not the case.

I think we have to approach this in an integrated manner, and I look forward to working with you, Mr. Chairman, and the executive branch in addressing this increasingly complex and difficult issue.

Mr. Hinds, I believe that last year the administration was required to submit to Congress a report on this subject—is that true?

Mr. HINDS. Yes, sir, it is.

Senator McCAIN. When can we expect that report?

Mr. HINDS. I would like to be able to promise that report very soon. I would if I could, Mr. Chairman, give a certain amount of excuses for not having done the report earlier.

I think that you will like the report better if you see it coming with the blessings of the new administration.

Senator McCAIN. I am sure I will love it when we have it. When can we have it?

Mr. HINDS. I do not want to make a rash promise. We did change the report, because we changed our assessment of what was required——

Senator McCAIN. Can we take a guess—a year, 2 years, 6 months?

Mr. **Hinds**. No, I would say something more like a month.

Senator **McCain**. Oh, thank you.

Mr. Holmes, another witness before this subcommittee this morning, Mr. Carus, will testify that there is reason to believe that the U.S. companies are involved in these activities.

According to one report, American corporations may have supplied 40 percent of the equipment used at the Saad 16 complex in Iraq.

Do you have any information that would corroborate, or refute that?

Mr. **Holmes**. This would be technology for missiles?

Senator **McCain**. Yes. To Iraq.

Mr. **Holmes**. I have no such information. I do not know if we are talking about deliveries that might have been made prior to 1987, or afterwards, but I do not have such information.

Senator **McCain**. I would appreciate it if you could respond to the committee, after you have looked at that, please. I would be very interested.

Mr. **Holmes**. I would be glad to.

[The information follows:]

Senator **McCain**. According to one report, American corporations may have supplied 40 percent of the equipment used at the Saad 16 complex in Iraq.

Do you have any information that could corroborate or refute that?

Mr. **Holmes**. We are not aware that licenses for any items covered by the Missile Technology Control Regime and destined for the Saad 16 complex in Iraq have been granted since the Regime was established in April 1987.

Any questions regarding exports of dual use items before the MTCR was established should be directed to the Department of Commerce.

Mr. **Holmes**. I just might comment, Senator, on something you said a minute ago, about which—I think, is pertinent to the question of the controls.

The technologies that are listed under the—in the annex, are, in fact, controlled—we believe, controlled well by the Arms Export Control Act and the ITAR regulations.

And about 75 percent of the items in the list are controlled by the Office of Munitions Control in the State Department. And the other 25 percent, which are dual-use items, are controlled under the Export Administration Act by the Commerce Department. And so they are subject to export controls at this time, and there is a way of adding technologies to the list.

As a matter of fact, one such item, which are batch mixers for mixing batches of components for rocket fuel, was added as a result of a cooperative arrangement between us and the Federal Republic of Germany. We thought it should be added. And we talked to our partners in the Regime. They agreed, and in fact, it is now part of the list of control technologies——

Senator **McCain**. How long did that take, Mr. Holmes?

Mr. **Holmes**. I do not know. I can ask one of my colleagues.

[Pause.]

It took about 6 months I am told.

Senator **McCain**. Thank you. Mr. Holmes, have the Chinese lived up to their non-proliferation pledges?

Mr. **Holmes**. We have talked to the Chinese about our concerns that their selling, their transferring of missiles, and they have told us that they will adopt a prudent and responsible approach. We have the impression that they are doing so. We are continuing to talk with them.

Senator McCain. I guess I better repeat the question.

In your view, have they lived up to their non-proliferation pledges?

Mr. Holmes. I am not quite sure what you mean by pledges, Senator, but we have had discussions with them, and they have told us—in fact, I, myself, was in Beijing last fall—that they intended to apply a responsible policy to this.

Senator McCain. Do you view the sale of the intermediate range missile to Saudi Arabia as living up to their non-proliferation pledges, or do you view it as a separate issue?

Mr. Holmes. No. I do not think it is a separate issue at all, but that was the issue that caught our attention, frankly.

When the CSS-2 missile was sold to Saudi Arabia, we were extremely concerned by it, and it was a result of that discovery that led us to engage them in a very steady series of conversations with them through last summer and last fall. And we are continuing to talk with them.

And the Chinese understand our concerns. There is no question about that.

Senator McCain. Well, a lot of us were surprised, I think. And so I believe that they have not lived up to their pledges, and I hope that they will in the future. I also think it is important to note that the Soviets have been the primary exporter of these weapons, particularly in the Middle East. And I would hope that this atmosphere of all the new Russian words we are learning, that they would show some restraint.

Do you have some confidence that they will do that?

Mr. Holmes. You are quite correct in saying that they have been primarily responsible—particularly in the delivery over a number of years of SCUD missiles in many different countries.

Senator McCain. About 5,000.

Mr. Holmes. That is right. And I have had conversations with Victor Karpov last September, and my deputy, Vince DeCain was in Moscow after that, later in the fall. And I know that the Soviets share our concern about this problem of missile proliferation.

We are going to continue talking with them. As a matter of fact, we anticipate having some discussions on this subject next week, when we go with Secretary Baker to Moscow.

Senator McCain. Thank you, Mr. Chairman.

Senator Bingaman. Thank you.

Mr. Holmes, is it the administration's position that the Soviet Union, and Eastern European countries should participate in the MTCR?

Mr. Holmes. We think it would be a good idea. We have suggested to the Soviet Union that it adhere to the Missile Technology Control Regime. They have, so far, not been willing to do so.

But, nonetheless, we intend to continue to talk to them about restraining the proliferation of missiles in some way.

Senator Bingaman. Do you have any reason to hope that they would participate, or adhere to the MTCR, or are you less ambitious than that in your goals?

Mr. HOLMES. I am very—I am, personally, very ambitious in getting the Soviets involved with us in applying very stringent restraints on the proliferation of missiles.

Whether we will be able to persuade them to join the Missile Technology Control Regime, as it now exists, is problematical. But I think that we need to examine all possibilities. And we will be examining all possibilities in our administration review of the policy, and also, subsequently, in discussing this problem with our partners in the Missile Technology Control Regime.

Senator BINGAMAN. Secretary Holmes, I am somewhat concerned by what I sense is a lack of urgency in the administration to get on with establishing its policy and its initiatives in this area.

President Bush emphasized the importance of the issue when he campaigned. Now, I understood you to say in answer to one of the earlier questions, that you are now starting a policy review. It seems a little bit late to be starting a policy review. When do we expect to have the review completed?

Mr. HOLMES. Well, let me say, Mr. Chairman, that having worked in this area for the Reagan administration since 1985, and now continuing—to date, in this administration, I sense no flagging in the sense of urgency about this question. And, indeed, until policies are changed, the existing policies from the Reagan administration continue to apply.

Now, obviously, the officials of our Government who are involved in reviewing a lot of urgent questions that require negotiations, such as start and conventional force reductions, and chemical warfare, and so forth—all of these policies cannot be reviewed simultaneously. I mean, there has to be some prioritization.

And so we have been spending the majority of our time, first looking at our national defense requirements in the strategic defense review, which has been conducted by the Defense Department.

And recently, we have started looking at all the arms control policies—that process is well embarked.

We have to look at our positions on START defense in space, before we can return to the negotiating table in Geneva.

And missile proliferation is now coming along. We are about to begin that review as well.

Senator BINGAMAN. Do you have an estimate as to when that review will be completed?

Mr. HOLMES. I do not. I would make a guess that in the—probably, maybe 6 weeks, something like that, I would think that probably by the end of June. That is just one man's estimate.

Senator BINGAMAN. Mr. Hinds, let me ask you about the way you folks are organized. Your description did not inspire confidence, let me say that.

You said you have a relatively organized relationship within the various parts of DOD, as I understood you. Could you be a little more precise as to how this—how you folks are set up to deal with this problem? I do think that the State Department has an Under Secretary for Security Assistance, Science and Technology that is responsible.

At Commerce, it is the Under Secretary for International Trade, as I understand it.

I am just not clear how you folks are geared up to deal with this at Defense?

Mr. HINDS. I think, Mr. Chairman, I used the term "relatively" well organized to coordinate all of these problems, because I, frankly, find some new nook or cranny in the Defense Department every week that has some need to be more involved with this issue.

But, specifically, in the organization for the missile non-proliferation business, the Under Secretary of Defense for Policy is in charge of that effort. And within his organization, I, working through the Assistant Secretary for International Security Policy, have that responsibility.

My office, the organization that I have, has the directorate for nuclear non-proliferation and missile non-proliferation.

I, by the way, also have another directorate that deals with chemical and biological proliferation matters. These are, in effect, policy offices, although they are responsible for coordinating all of the efforts which may involve the very important function—for example, international cooperative programs that work primarily out of the Under Secretary for Acquisitions office.

We have to be very tightly tied into that office, because it has people who are very knowledgeable about the missile proliferation problem, and about the Missile Technology Control Regime.

So the policy office that I have is responsible for ensuring that that information flow works between the policy side and the acquisition side.

There are also a large number of programs that might be working under foreign military sales, for example, with the Defense Security Assistance Agency.

And so, while I am not a part of that organization, it is a part of the policy organization. It is my responsibility to see that they are aware of the Missile Technology Control Regime, of projects that we may have concerns with, and that their programs are not inadvertantly assisting some project of concern.

Also, within the policy office, we have the Defense Technology Security Administration, DTSA, which is the point of contact, I guess I would say, for the referrals of license applications.

The license processing, I think of as being not a small part, but a significant part of the job that is involved.

We have to be sure that the people who operate the machinery, so to speak, are familiar with the organization, and with the problem, and automatically refer these questions to my office for the policy implications, and for the coordination of all of these things.

The reason I said "relatively" is that, as I say, discover, weekly, some other organization that may have technical knowledge that would be useful. The services, themselves, and the Joint Staff, as well.

Senator BINGAMAN. Well, your response does not exactly allay my fears about the way you folks are organized to deal with this problem.

Is there any thought to revise the organization to more effectively handle it, or is this—is the system you now have in place the one you intend to go forward with?

Mr. HINDS. No. I think that I am almost in a position of referring you to the review on the policies of some of these sorts of things, because we right now have a management study for the policy side of the office that is being conducted.

Senator BINGAMAN. That is different than the reports you are giving us in a month?

Mr. HINDS. Absolutely. The reports you will receive will identify problems in the way we are organized now, but there is a management study that has been, to me, somewhat encouraging in at least recognizing the importance of the problem, and, frankly, that there is some reorganization that I believe should be undertaken.

Senator BINGAMAN. When will that management study be complete?

Mr. HINDS. I am not sure. I believe it was due for the Secretary of Defense's review sometime this month—in the month of May, but I am not sure exactly when that is.

Senator BINGAMAN. So, based upon what he determines after he sees that, you may reorganize?

Mr. HINDS. We may. And I think that at least, from my perspective, some of the recommendations that I have made, and some of the recommendations that others have made, which essentially involves a somewhat tighter focus on this particular problem will be implemented.

A simple example of that is that at my level, for example, I have many other responsibilities, and at least, my own opinion is that someone at my level should have a fairly focused look on this particular issue.

I do not want to predict how that will come out. I am sure the Under Secretary for Policy will still be heavily involved in it.

Senator BINGAMAN. Let me ask a question on another subject, because we are going to have to get onto the next panel. But China, Argentina, and Brazil are major sources of this missile technology going to the developing world.

Should we put some requirements on those countries as recipients of, or participants in cooperative space programs, or recipients of sensitive technology. Essentially, insist that as a quid pro quo for that continued relationship, they not transfer missile technology to Third World countries? Is that a reasonable position for us to take?

Mr. Holmes, I would ask you that, or Mr. Hinds—either one.

Mr. HOLMES. You have mentioned three different countries that are involved in different ways in this problem. And I think that we ought to look at the full range of ways of persuading them to adopt responsible policies of restraint.

We have been very tough on the Condor program in Argentina, for example. And there, I think we have had some success in slowing down the development of that program. And we have talked directly to the government—the Argentines about that——

Senator BINGAMAN. Have we withheld technology from Argentina as a way to——

Mr. HOLMES. We certainly have——

Senator BINGAMAN. To slow them down in that process?

Mr. HOLMES. We certainly have, and would refuse to license any technologies that were constrained by the Missile Technology Control Regime to that country. Yes.

Senator BINGAMAN. I am talking about other types of technology.

Mr. **Holmes**. Even across the board, the category two items that are less sensitive, we would not license to Argentina.

Senator **Bingaman**. Have we made a linkage, though, between our space-related activity, or other sensitive technologies what are not covered by the Missile Technology Control Regime?

Mr. **Holmes**. As of now, we have not. I mean, we apply the Missile Technology Control Regime restraints across the board, whether it is for military missile programs, or for space launch programs. I mean, we would not license any of the technology—we do not license any of the technologies constraint—whether it would be for space launch, or for military purposes in any of those countries, or, indeed, any place.

Senator **Bingaman**. In addition to enforcing the Missile Technology Control Regime, or adhering to it, though, are there other pressures we have brought to bear on Argentina to dissuade them from going forward with the Condor Two program?

Mr. **Holmes**. Well, I can think of ways that this can be done. I would not wish to describe them in open hearing.

Senator **Bingaman**. Mr. Hinds, did you have any comment on whether it is appropriate for us to put some additional quid pro quo into these arrangements?

Mr. **Hinds**. I think in general terms that the idea of sanctions is a powerful sort of lever to apply. I am not so sure that I like the idea of being limited to specific sanctions, or to automatic sanctions, because there is such a broad range of ways of approaching these questions.

Again, as Ambassador Holmes has implied, I think that some of the activities, or some of the ideas that may come to your mind should better be discussed in a closed session.

There is one clarifying sort of remark that comes to my mind that I ought to take about 2 seconds with. And that seems to me that the combination of something I said, and something that Alan Holmes has said, may be somewhat misleading. And that has to do with this sort of philosophical difference among some of the allies that talk about nuclear capabilities, and whether or not this applies only to nuclear capabilities.

I have noticed a drift towards describing things in that way. And I would say that there really is no ambiguity about the Missile Technology Control Regime. Although it leads off with the sentence about nuclear capable weapons, it is based entirely upon the capabilities of the technology—that is, the range and payload combination. And that does not require extension to other kinds of weapons, unless you are talking about the changing of the range and payload. Because that applies very clearly and very specifically to all kinds of munitions, whether they be nuclear, or chemical, or otherwise.

I just wanted to make that clear, because I thought I had misled you earlier.

Senator **Bingaman**. Senator Wallop has a statement he wants to make before we complete this panel.

Senator **Wallop**. I would just say, Mr. Holmes, that I guess one of the reasons why I would be very reluctant to see us globalize INF, or anything else, come from your responses to Senator McCain.

You said the Chinese understand our point of view, but our action was to get further into bed with them, after they had shipped these missiles with the Carlucci's arrangements.

You said the Soviets share our concern, but their restraint has been to deliver long-range bombers to Libya.

If we are not willing to make a judgment in a rather informal set of circumstances like this—your response about the West Germans was that they are investigating, but, I mean—in point of fact, if these regimes are going to work, somebody has to be serious about them, besides ourselves. Otherwise, we ultimately are the only ones constrained.

I just have to say that it is very disappointing to hear an unwillingness to make a judgment on Soviet behavior, and Chinese behavior, and West German behavior.

Your strongest judgment was reserved for Argentina, which represents, perhaps, less of a threat to us than the other three countries.

Mr. HOLMES. Let me just respond to that, Senator, if I may. In fact, I believe that our partners have been, and are serious about the application of the Missile Technology Control Regime. There have been—it is true that we have denied more license applications—perhaps we have received more than our partners have.

But the Germans have denied several applications for exporting technologies. So have our other partners.

And as far as our discussions with the Soviets are concerned, let me just say that it is quite correct, they have been responsible for a vast proliferation of SCUD missiles, and indeed, missiles of lesser range.

I am not, frankly, aware of any intelligence indicating current distribution of missiles. Aircraft—that is quite true. And we have had some discussions with them about that, as well. But, in a related way.

But I just have to say that conducting a hearing of this kind in open session is—does prevent me from exploring other possibilities.

Senator WALLOP. I hesitate to interrupt, but I have to go to the swearing-in of a new Congressman today.

The problem I have is that you may be reluctant for fear of bruising the Soviet feeling, or Chinese feeling, but the American public sits here, and has only this to go on as the judgment of the United States about the behavior of people in the world, who we either hope to influence, or hope to gain the cooperation of.

The public has no way of knowing anything but what they hear.

If you want to bring it up in private to the Soviets for god's sake, the American people ought to be able to know that we have a judgment that says that the Soviet behavior is contrary to their rhetorical statement.

The Chinese behavior is contrary to their rhetorical statements. They share our concern, they understand our point of view. They give a damn about neither.

The public would be well advised to say at this moment that, "No, they do not."

Mr. HOLMES. We have made a judgment. In fact, we have approached the Soviets about the delivery of the aircraft that you have referred to. And we have complained about that.

Let me just add that my reticence has to do also with the fact that we are conducting this policy review, and I would not wish to, in open hearing, to prejudice what may, or may not be decided by the administration as we work our way through this policy review.

Senator WALLOP. That is what scares me. Thank you, Mr. Chairman.

Senator BINGAMAN. Let me ask a specific question about this linkage issue that I explored in general terms.

India is about to test the Agni missile. If they go forward and test, should we discontinue our cooperation with their space effort—because I have been informed that there is a fairly direct link between the technology we have provided to them for that space effort, and their capability with the Agni?

Mr. HOLMES. We have approached the Indian Government about this. We have made known our concerns. We are continuing to discuss it with them.

Senator BINGAMAN. All right. We will go on to the next panel. I appreciate your testimony very much, Secretary Holmes.

Mr. Hinds, thank you very much.

Senator BINGAMAN. The next panel is Seth Carus, Janne Nolan, and Geoffrey Kemp. If they would please come forward, we will get started. Let me just alert folks that we are going to have two votes, starting at 11:30. And so we will break about 11:40, so I can go make those two votes. They are back to back. And then, we will continue after that.

Again, we will start with Dr. Carus, who is with the Washington Institute for Near East Policy.

Dr. Janne Nolan, who used to be on the personal staff of Senator Hart, when he was a member of this committee, and she is now with the Brookings Institution.

And Dr. Geoffrey Kemp would be third.

Dr. Carus, you go right ahead, please.

STATEMENT OF W. SETH CARUS, FELLOW, WASHINGTON INSTITUTE FOR NEAR EAST POLICY

Dr. CARUS. Thank you, Mr. Chairman. It is an honor to be asked to testify before this committee, and I am grateful for the opportunity to appear here.

The proliferation of surface-to-surface missiles is a growing problem with serious implications for U.S. security policy.

Mr. Chairman, I would request that my full statement, and the policy focus that I have written on this subject be submitted for the record?

Senator BINGAMAN. We will be glad to include it in the record.

Dr. CARUS. In the next few minutes, I will try to briefly survey the missile proliferation problem: what is happening, where it is happening, and how it is happening.

Historically, Third World countries have acquired their ballistic missiles from the super powers—either the United States or the Soviet Union.

The Soviet Union has been the largest supplier of ballistic missiles, providing SCUD-B, FROG-7 and SS-21 missiles to at least nine countries.

The United States has supplied missiles to two countries, South Korea and Israel. Recently, the People's Republic of China entered the picture by providing missiles to Saudi Arabia.

The Soviet Union, however, bears most of the responsibility for spreading ballistic missiles around the world. A majority of the missiles used in the gulf were of Soviet origin.

Even the Iraqi Al-Husayn program, which is an extended range SCUD, was made possible only by the supply of a large number of SCUD missiles by the Soviets to Iraq.

Similarly, the SCUD-B missiles fired by Libya at the Italian island of Lampedusa in 1986, came from the Soviet Union.

Syria's formidable missile inventory consists totally of Soviet missiles. And the Soviets remain willing to export missiles, as demonstrated by their supply of more than 30 SCUD-Bs to Afghanistan in late 1988, which is after the United States and Soviets began their dialogue on the subject of missile proliferation.

The United States stopped exporting missiles to the Third World in the late 1970s. And as a result of the INF Treaty between the United States and the Soviet Union, neither country can provide surface-to-surface missiles for the range of between 500 and 5,000 kilometers to any other country.

In addition, U.S. diplomacy—since the Chinese sale to Saudi Arabia—appear to have convinced Beijing of the potential dangers of selling such missiles to the Third World. As a result, it appears that China is no longer overtly marketing its M series of missiles.

Currently, a large number of countries in the Third World are trying to design and build missiles, without having to buy completed systems from the industrialized world.

The director of the Central Intelligence Agency, Judge Webster, has suggested that perhaps 15 countries in the Third World may be building ballistic missiles by the year 2000. Although there is reason to doubt that so many countries will be making ballistic missiles in a decade, it is clear that numerous missile programs are now in the works.

The Israelis appear to have the most sophisticated of the programs. It is believed that the latest version of their Jericho missile has a range of 1,500 kilometers. And, according to experts who have analyzed the performance of their Shavit space launch vehicle, the Israelis appear to have the technology required to build an intercontinental ballistic missile with a range in excess of 5,000 kilometers.

Both India and Pakistan have missile programs. India has two separate programs. The short-range Prithvi, with a 250 kilometer range, and the Agni, which you referred to a minute ago, with a 2,500 kilometer range.

Press reports suggest that the Agni is to be tested in the near future. Significantly, it is generally believed that the Indian's military missile program was a beneficiary of technology provided by western countries for use by the civilian space program.

Pakistan has short and medium-range missiles under development. Other countries with missile programs include Argentina, Brazil, Egypt, Iran, Iraq, Libya, North Korea, South Korea, and Taiwan.

Although the desire to acquire missiles exists, the practical difficulties involved in the design, development, and production of missiles is likely to reduce the number of unique designs that appear in the Third World.

More likely is a trade in ballistic missiles between countries. This trade exists now, but it is relatively small. The first important transfer of missiles between Third World countries was Libya's sale of Soviet-made SCUDs to Iran in 1985. This was followed by additional deliveries to Iran of up to 100 SCUD missiles from North Korea.

With the major exception of Israel, countries in the Third World are heavily dependent on external assistance. In a few cases, the programs involved, copying older generation missiles, with relatively old technology.

North Korean, Iraqi and Egyptian programs all rely to varying degrees on SCUD-B technology. In all cases, the countries are taking advantage of fairly old and well understood technology since the SCUD-B is essentially an updated German V-2 of World War II origin.

The more sophisticated programs, however, require considerable assistance from the industrialized world. European scientists and engineers are active throughout the Third World in this regard.

According to information that has appeared in the press, West Germans have provided assistance to programs in Egypt, Iraq, Libya, Argentina and Brazil.

The French have also been involved in some programs, including helping the Egyptians, the Argentinians, and the Indians.

Egpyt's short-range Sakr 80 missile was designed and developed with the active support of a French company.

Finally, there are disturbing indications that technology from the United States has been used in some of these programs.

The best known of the missile programs is the Condor II. The U.S. Government believes that this program has been supported by two major European defense contractors. A German company, Messerschmidt, or MBB, and an Italian company, SNIA, have actively assisted the Argentinians in the development of this missile.

It is possible to discover similar kinds of activity elsewhere. A variety of West German companies are helping Iraq to put together the Saad 16 complex in northern Iraq.

Press reports suggest that Iraq is spending more than $200 million to build this facility, which will provide the capabilities needed to develop a variety of different types of missiles, including both ballistic and cruise missiles.

The on-going Libyan program to build a missile started with the activity of Otrag, a West German company, and has continued since then with the presence of German engineers hired directly by the Libyan Government.

China also has become an active purveyor of missile technology to the Third World.

The Iranian missile program appears to rely heavily on Chinese technical expertise. Similarly, it is believed that the SCUD-B missile supplied to Iran by North Korea incorporated critical components made in China.

Pakistan is reported to have turned to China for technical assistance in making its new ballistic missiles. And China is reported to be giving technology from its Long March II rockets to Brazil.

Thus, even though China appears to have agreed not to export additional ballistic missiles, it continues to provide important technical support to development programs.

Unfortunately, there is reason to believe that U.S. companies also are involved in these activities. According to one report, American corporations may have supplied 40 percent of the equipment used at the Saad 16 complex in Iraq.

If these allegations are confirmed by subsequent investigation, they indicate a need for serious revision of existing U.S. missile technology export controls.

In addition, Third World countries are starting to cooperate in the development of missiles—transferring technology from one country to another.

The Chinese have been helping North Korea and Iran. Egypt may have provided samples of the SCUD-B missile that enabled the North Koreans to initiate their development program.

It is generally believed that the Iraqi Al-Husayn and Al-Abbas missiles were built with active assistance of the Egyptians.

Iraq currently is negotiating possible joint missile development with Brazilian companies.

In the future, the capabilities of both ballistic and cruise missiles are going to grow considerably. The ballistic missile programs now in progress provide useful indicators of what should be expected in the 1990s.

The ranges of ballistic missiles in the Third World will continue to grow. Ironically, many of the missiles now being developed or deployed in the Third World are systems that would be prohibited in Europe under terms of the INF Treaty.

The Agni in India has a 2,500 kilometer range. The Israeli Jericho a 1,500 kilometer range. The Condor II at least an 800 kilometer range. The Saudi CSS-2s, 2,500 kilometers.

The accuracy of ballistic missiles is also going to improve. Existing missiles tend to be inaccurate. However, a growing number of countries in the Third World will have systems that are reasonably accurate in the 1990s.

A thousand kilometer range missile with an accuracy about 50 meters is well within the capability of at least some Third World countries.

It is the cruise missile, however, that will pose the most serious challenge in the 1990s. The technologies required to build conventionally armed cruise missiles will be within the reach of a considerable number of countries in the Third World.

Cruise missile guidance systems will be readily available, especially as commercial applications of the Global Positioning System, or GPS, become widespread. GPS systems make use of navigation signals transmitted by satellites, using GPS receivers costing only a few thousand dollars. It will be possible for cruise missiles to achieve accuracies at essentially unlimited ranges of less than 100 meters.

Moreover, by taking advantage of the inexpensive technologies being developed for remotely piloted vehicles and drones, it should be possible to build these missiles at low costs. Tied together with cluster munitions, intelligence submunitions and fuel air explosives, cruise missiles will have the accuracy and lethality to be extraordinarily effective.

Many of the missiles will probably be armed with warheads of mass destruction. At the present time, a few probably have nuclear warheads.

Israel is believed to arm its Jericho missiles with nuclear warheads. And it is believed that India and Pakistan intend to do the same with their missiles.

Given the desire of many Third World countries to develop nuclear weapons, it would not be surprising if eventually other countries join the list.

More pressing, and perhaps more immediate, is the chemical dimension. Right now there are at least two countries in the Third World that have chemical warheads—Syria and North Korea. And other countries are trying to join that list. Iran, Iraq, and Libya are all reported to have development programs for their chemical warheads.

In conclusion, I would like to point out one dimension that sometimes gets overlooked—which is the difficulty of developing ballistic missiles. There are a variety of reasons for this. Just as only a few countries have attempted to develop their own high performance aircraft—the same kinds of difficulties exist in the development of ballistic missiles.

As a result, at a certain point, many of these programs will probably be cancelled, and countries will rely increasingly on shared missile technology.

Certain critical technologies appear rather difficult to master. The guidance systems are difficult to produce, and it seems doubtful that many countries will be able to develop their own guidance industries.

Third World countries have had considerable difficulty producing the high-powered rocket motors for ballistic missiles that are needed. It also appears they have had problems developing warheads, and have required foreign assistance to make payloads of any significance.

Finally, it should be recognized that the missiles are extremely expensive. It has been estimated that it will cost $3.2 billion to develop the Condor missile and build 400 of them, or about $8 million per missile. Development costs alone may exceed $1 billion.

These are considerable sums, and most Third World countries will have difficulty devoting such large amounts of money to projects of this sort.

For these reasons, many countries seeking to obtain ballistic missiles will have to be content to acquire complete systems from other Third World countries.

By working with other countries that have joined the Missile Technology Control Regime, and by conducting bilateral diplomacy with friendly countries in the Third World, the United States should be able to slow the proliferation of ballistic missiles.

The success of our efforts will depend in part on cooperation we receive from the Soviet Union and China. However, we should resist the temptation of trying to get these two countries to join the

MTCR. For different reasons, both are likely to have problems with the Regime, and at this time, our diplomatic efforts would be better expended in bilateral discussions.

Thus, there is reason to be optimistic that the current proliferation of ballistic missiles can be brought under some kind of control. However, the same optimism does not extend to cruise missiles. The technology to make a cruise missile appears easier to master, and more readily available. The development and production costs are probably lower. Many of the technologies have legitimate, civilian uses.

As a result, it is likely that in the 1990s a large number of countries in the Third World will begin to acquire relatively sophisticated cruise missiles.

With that, I will end my presentation.

[The statement of Mr. Carus follows:]

Testimony of W. Seth Carus

Fellow, Washington Institute for Near East Policy

It is an honor to be asked to testify before this committee and I am grateful for the opportunity to appear here. The proliferation of surface-to-surface missiles is a growing problem with serious implications for U.S. security policy. Mr. Chairman, I request that my full statement and the Washington Institute's Policy Focus be submitted for the record.

The Problem of Proliferation

In the next few minutes, I will briefly survey the missile proliferation problem: what is happening, where it is happening, and how it is happening. Countries in the Third World are extremely secretive about their surface-to-surface missile acquisition programs. Since the following discussion is based solely on open sources, I must stress that it almost certainly omits important developments which have yet to be made public.

Ballistic missile proliferation is not a new problem -- it first emerged as an issue in the early 1960s when the Egyptians and Israelis engaged in a race to develop ballistic missiles. However, in the past few years the pace of proliferation has accelerated, and the associated dangers have become more acute. Currently, about twenty countries in the Third World either possess ballistic missiles or are trying to acquire them.

In addition, there is a new aspect to the problem that is just beginning to emerge: the proliferation of cruise missiles. The technology to produce relatively inexpensive, accurate cruise missiles is becoming more widely available. In the 1990s, it is likely that a growing number of Third World countries will possess cruise missiles having long ranges and high accuracies.

The United States should be concerned about these developments for a variety of important reasons. These missiles pose a potential threat to American military forces operating in the Third World. The dangers will grow in the coming decade as the missiles become more sophisticated. The missiles also pose a danger to our allies around the world. Two of our allies, Italy and Israel, have already been subjected to missile attacks, and others, including South Korea and Saudi Arabia are potential victims.

At present, most of the missiles used in the Third World are highly inaccurate, making them useful only when targeted at large cities. However, it would be a mistake to assume that they are only suitable for terror strikes against civilians. The operational utility of ballistic missiles is getting considerable attention from military forces around the world. Countries in the Third World recognize, perhaps to a greater extent than in the West, that these missiles can be used to perform a variety of critical military functions. A whole new generation of ballistic missiles is now appearing, and countries in the Third World are following these developments with considerable interest. The U.S. Army is leading the way with its 150-kilometer range ATACMS ballistic missile, but it is likely that other countries will adopt similar technology in the coming years. Missiles like the ATACMS can carry a reasonably large payload, they are reasonably inexpensive, and they are reasonably accurate. This makes them militarily effective in a way that missiles like the Chinese CSS-2s or the Soviet SCUD-Bs are not.

The Extent of Proliferation

Two events that took place just over a year ago highlight the extent of the current problem. The first was Saudi Arabia's acquisition of Chinese intermediate range ballistic missiles (with a range of 2,500 kilometers). These missiles cover the entire Middle East, as well as portions of the Soviet Union and the Indian subcontinent. The transfer of these obsolescent missiles demonstrated the importance of ballistic missiles to countries in the Third World, and the extent to which they are willing to pay substantial amounts of money to acquire weapons of this type.

It is the second series of events, however, that really drives home the centrality of ballistic missiles for Third World military forces. During the course of the Gulf War, Iran and Iraq fired more than 1,000 surface-to-surface missiles at each other. Almost exactly a year ago, the two countries ended the last of the so-called "war of the cities" waged by the two countries -- campaigns of attacks against urban areas. During the preceding 52 days, they fired 450 surface-to-surface missiles against civilian targets, including more than 250 missiles with ranges of 300 kilometers of more.

The 1988 "war of the cities" was notable because of the large number of missiles fired during a relatively short period of time. Equally important, it highlighted the growing significance of Third World technology in missile proliferation. The Iranians fired Soviet-designed SCUD-B missiles built by North Korea, another Third World country. It appears that the North Korean production capability was acquired without direct assistance from the Soviet Union. In addition, the Iranians fired at least 200 shorter-range Oghab rockets that appear to have been built in Iran but based on technology and technical assistance provided by China.

A similar state of affairs existed on the Iraqi side. Iraq fired about 190 Al-Husayn 650-kilometer range ballistic missiles, which are extensively modified SCUD-Bs originally acquired by the Iraqis from the Soviet Union. The Iraqis, with considerable foreign assistance, were able to double the range of the missiles. In addition, Iraq test-fired a second modified version SCUD-B, the Al Abbas, with a range of 900 kilometers.

These examples illustrate the degree to which the Third World has adopted ballistic missiles as a strategically important weapon and the extent to which they are willing to use them.

The Global Dimension

Missile proliferation, however, is a global problem that extends far beyond the confines of the Middle East. At the present time, about twenty countries in the Third World either have surface-to-surface missiles or are trying to develop or acquire them. In Latin America, both Argentina and Brazil have programs. Indeed, Brazil has two competing efforts. In East Asia, North Korea is making surface-to-surface missiles, South Korea has converted surface-to-air missiles into ballistic missiles, and Indonesia appears to developing the necessary technology. Taiwan has had a program, though it may no longer be active. In South Asia, both India and Pakistan have very active ballistic missile programs. Afghanistan has SCUD-B missiles, delivered from the Soviet Union in late 1988.

The Middle East, however, is at present the most dangerous area for ballistic missile proliferation. It is in that volatile part of the world that ballistic missiles have been used in battle, and most countries in the region now possess missile forces. Eleven Middle East countries have them, and five also have organized missile development programs. At the present time, any country in the Middle East with any pretensions of being a military power possess ballistic missiles.

Transfer of Missiles

Historically, Third World countries acquired their ballistic missiles from the major powers, either the United States or the

Soviet Union. The Soviet Union has been the largest supplier of ballistic missiles, providing SCUD-B, FROG-7, and SS-21 missiles to at least nine countries. The United States supplied Honest John and Lance missiles to two countries, including South Korea and Israel. Recently, the People's Republic of China entered the picture by providing missiles to Saudi Arabia.

The Soviet Union, however, bears most of the responsibility for spreading ballistic missiles around the world. A majority of the missiles used during the Gulf War were of Soviet origin. Even the Iraqi Al-Husayn program was made possible only by the supply of at least 300 SCUD-B missiles by the Soviets to Iraq. Similarly, the SCUD-B missiles fired by Libya at the Italian island of Lampedusa came from the Soviet Union. Syria's formidable missile inventory consists totally of Soviet missiles. The Soviets remain willing to export missiles, as demonstrated by their supply of more than thirty SCUD-Bs to Afghanistan in late 1988.

The United States stopped exporting missiles to the Third World in the late 1970s. As a result of the INF treaty between the U.S. and the Soviets, neither country can provide surface-to-surface missiles with a range of between 500 and 5000 kilometers to any other country. In addition, U.S. diplomacy since the Chinese CSS-2 sale appears to have convinced China of the potential dangers of selling such missiles to Third World countries. As a result, it appears that China is no longer overtly marketing its M-series missiles.

Third World Missile Development Programs

Currently, a large number of countries in the Third World are trying to design and build missiles without having to buy completed systems from the industrialized world. The director of the Central Intelligence Agency, Judge William H. Webster, has suggested that perhaps fifteen countries in the Third World may be building ballistic missiles by the year 2000. Although there is reason to doubt that so many countries will be making ballistic missiles in a decade, it is clear that numerous missile programs are now in the works.

The Israelis have the most sophisticated of the programs. It is believed that the latest version of their Jericho missile has a range of fifteen hundred kilometers. According to experts who have analyzed the performance of their Shavit space launch vehicle, the Israelis appear to have the technology required to build a intercontinental ballistic missile with a range in excess of 5,000 kilometers.

Both India and Pakistan have missile programs. India has two separate programs: the Prithvi with a 250-kilometer range and the Agni with a 2,500-kilometer range. Press reports suggest that the Agni is to be tested in the near future. Significantly, it is generally agreed that the Indian military missile program was a beneficiary of technology provided by Western countries for use by India's civilian space program. Pakistan has short and medium-range missiles under development. Other countries with missile programs include Argentina, Brazil, Iran, Iraq, Libya, North Korea, South Korea, and Taiwan.

Although the desire to acquire missiles exists, the practical difficulties involved in the design, development, and production of missiles is likely to reduce the number of unique designs that appear in the Third World. More likely is a trade in ballistic missiles between countries in the Third World. This trade is still relatively small, but we can expect it to get much larger. The first important transfer of missiles between Third World countries was Libya's sale of Soviet-made SCUD-B missiles to Iran in 1985. This was followed by additional deliveries to Iran of up to 100 SCUD missiles from North Korea.

Technology Transfers

With the major exception of Israel, countries in the Third World are heavily dependent on external assistance. In a few cases, the programs involve copying older generation missiles with relatively old technology. The North Korean, Iraqi, and Egyptian programs all rely to varying degrees on SCUD-B technology. In all cases, the countries are taking advantage of a fairly old and well-understood technology, since the SCUD-B is essentially an updated German V-2 of World War II origin.

The more sophisticated programs, however, require considerable assistance from the industrialized world. European scientists and engineers are active throughout the Third World in supporting these programs. According to information that has appeared in the press, West Germans have provided assistance to programs in Egypt, Iraq, Libya, Argentina, and Brazil. The French also have been involved in some programs, including helping the Egyptians, the Argentineans, and the Indians. Egypt's short-range Sakr 80 was designed and developed with the active support of a French company. Finally, there are disturbing indications that technology from the United States has been used in some of these programs.

The best known of these efforts is the Condor II, which has an 800 kilometer range. The U.S. government believes this program has been supported by two major European defense contractors. A German company, Messerschmidt (or MBB), and an Italian company, SNIA, actively assisted the Argentineans and the Egyptians in the development of the missile.

It is possible to discover similar kinds of activity elsewhere. A variety of West German countries are helping Iraq to put together the Saad 16 complex in northern Iraq. Press reports suggest that Iraq is spending more than $200 million to build this facility, which will provide the capabilities needed to develop a variety of different types of missiles, including both ballistic and cruise missiles. The on-going Libyan program started with the activity of Otrag, a West German company, in Libya and has continued since then with the presence of German engineers hired directly by the Libyan government.

China also has become an active purveyor of missile technology to the Third World. The Iranian missile program appears to rely heavily on Chinese technical expertise. Similarly, it is believed that the SCUD-B missile supplied to Iran by North Korea incorporated critical components made in China. Pakistan is reported to have turned to China for technical assistance in making its new ballistic missiles. Finally, China is giving the technology of its Long March II rockets to Brazil. Thus, even though China appears to have agreed not to export additional ballistic missiles, it continues to provide technical support to development programs.

Unfortunately, there is reason to believe that U.S. companies also are involved in these activities. According to one report, American corporations may have supplied 40 percent of the equipment used at the Saad 16 complex in Iraq. If these allegations are confirmed by subsequent investigation, they indicate a need for serious revision of existing missile technology export controls.

In addition, Third World countries are starting to cooperate in the development of missiles, transferring technology from one Third World country to another. The Chinese have been helping both North Korea and Iran. Egypt may have provided samples of the SCUD-B missile that enable the North Koreans to initiate their development program. It is generally believed that the Iraqi Al-Husayn and Al-Abbas missiles were built with the active assistance of the Egyptians. Iraq currently is negotiating possible joint missile development with Brazilian companies.

Future Capabilities

In the future, the capabilities of both ballistic and cruise missiles will grow considerably. The ballistic missile development programs now in progress provide useful indicators of what should be expected in the 1990s. The ranges of ballistic missiles in the Third World will continue to increase. Ironically, many of the missiles that are now being developed or deployed in the Third World are systems that under the terms of the INF treaty would be prohibited in Europe: the Agni in India has a twenty-five hundred kilometer range; the Israeli Jericho a fifteen hundred kilometer range; the CONDOR II an eight hundred kilometer range; the Saudi CSS-2s, twenty-five hundred kilometers.

The accuracy of ballistic missiles also is going to improve. Existing missiles tend to be inaccurate. The SCUD-B will land within a kilometer of the intended target. The Saudi CSS-2s are even less accurate and are unlikely to land within a couple of kilometers of the target. However, a growing number of countries in the Third World will have systems that are reasonably accurate: a thousand-kilometer range missile with an accuracy of about fifty meters is well within the capability of at least some Third World countries.

It is the cruise missile, however, that will pose the most serious challenges in the 1990s. The technologies required to build conventionally-armed cruise missiles will be within the reach of a considerable number of countries in the Third World.

Cruise missile guidance systems will be readily available, especially as commercial applications of the Global Positioning System (GPS) become widespread. GPS systems make use of navigation signals transmitted by satellites. Using GPS receivers, costing only a few thousand dollars, it is possible for cruise missiles to achieve accuracies of less than 100 meters, even at long ranges. Moreover, by taking advantage of the inexpensive technologies being developed for remotely piloted vehicles and drones, it should be possible to build those missiles at relatively low cost. Tied together with cluster munitions, intelligent submunitions, and fuel air explosives, cruise missiles will have the accuracy and lethality to be extraordinarily effective.

Many of the missiles will probably be armed with warheads of mass destruction. At the present time, a few have nuclear warheads. Israel is believed to arm its Jericho missiles with nuclear warheads, and it is believed that India and Pakistan intend to do the same with their missiles. Given the desire of many Third World countries to develop nuclear weapons, one can assume that further down the road (not in the next few years but maybe toward the end of the century or into the next century), other countries will join that list.

More pressing, and more immediate, is the chemical dimension. Right now there are at least two countries that have chemical warheads -- Syria and North Korea -- and other countries are trying to join that list: Iran, Iraq, Libya are all reported to have development programs for chemical warheads. Some reports have suggested that Condor II is intended to have a chemical warhead.

These weapons also can be armed with reasonably effective conventional warheads. Currently, most of the ballistic missiles in the Third World are armed with unitary warheads, which are nothing more than large bombs. This is beginning to change. The Israelis have had cluster munitions warheads for their Lance missiles for over a decade, and other countries are acquiring similar types of weapons. The Egyptian Sakr 80 will have a cluster munitions warhead, as well as one fitted with antitank mines. In addition, some missiles are likely to carry some of the new generation of weapons, so-called "brilliant" munitions

-- smart munitions that can autonomously track and attack targets. There are some indications that countries may be working on fuel air explosive warheads for missiles.

Inhibiting Missile Proliferation

In conclusion, I would like to point out one dimension that sometimes gets overlooked, which is the difficulty of developing ballistic missiles. And there are a variety of reasons for it. Only a few countries have attempted to develop their own high performance aircraft, yet a great many are trying to produce their own ballistic missiles. Most countries have long realized that it makes more sense to buy aircraft from foreign sources, even when they possess the necessary technology. The same recognition is likely to appear in the ballistic missile realm as well. At a certain point, many of these programs will be cancelled, and countries will rely increasingly on shared missile technology.

In addition, certain critical technologies appear difficult to master. The guidance systems are difficult to produce, and it seems doubtful that many countries will be able to develop their own guidance industries. Third World countries have had considerable difficulty producing the high powered rocket motors for ballistic missiles. It also appears that they have had problems developing warheads, and have required foreign assistance to make payloads of any sophistication.

Finally, it should be recognized that the missiles are extremely expensive. It has been estimated that it will cost $3.2 billion to develop the Condor missile and build 400 of them, or about $8 million per missile. Development costs alone may exceed $1 billion. These are considerable sums, and most Third World countries will have difficulty devoting such large amounts of money to projects of this sort.

For these reasons, many countries seeking to obtain ballistic missiles will have to be content to acquire complete systems from other Third World countries. However, even countries that build their own missiles almost certainly will use off-the-shelf components developed and built by other countries.

By working with the other countries that have joined the Missile Technology Control Regime (MTCR), and by conducting bilateral diplomacy with friendly countries in Third World, the United States should be able to slow the proliferation of ballistic missiles. The success of our efforts will depend in part on the cooperation we receive from the Soviet Union and China. However, we should resist the temptation of trying to get these two countries to join the MTCR. For different reasons, both countries are likely to have problems with the regime, and at this time our diplomatic efforts could be better expended in bilateral discussions that are likely to lead to immediate results.

Thus, there is reason to be optimistic that the current proliferation of ballistic missiles can be brought under some kind of control. However, this same optimism does not extend to cruise missiles. The technology required to make a cruise missile is easier to master and more readily available. The development and production costs are probably lower. Many of the technologies have legitimate civilian applications for small aircraft. As a result, it is likely that in the 1990s a large number of countries in the Third World will begin to acquire relatively sophisticated cruise missiles.

Senator BINGAMAN. Thank you very much.

We will continue with Dr. Nolan's testimony. If you could summarize your statement we will go for another 6 or 7 minutes here before we have to take a break.

STATEMENT OF DR. JANNE NOLAN, THE BROOKINGS INSTITUTION

Dr. NOLAN. Thank you, Mr. Chairman. It is a pleasure to be here. I have a prepared statement that I would ask to be included in the record.

Senator BINGAMAN. It will be included.

Dr. NOLAN. I will make just three or four very brief points. I have been asked to talk about prior experience that we have had as a government in trying to regulate conventional arms proliferation, and what additional measures we might consider, in addition to export controls, that might be applicable today to the problem of missile proliferation.

Briefly, I think we do have a body of operational experience about ways to counter proliferation in a number of areas, and that many of the experiences that we have had in negotiations and in building institutions to counter proliferation for nuclear weapons, under COCOM, in the Office of Munitions Control, and certainly in the area of chemical weapons, all do provide an infrastructure and some object lessons about how to proceed.

In looking at this issue, I think it is almost always preferable to build on existing institutions than to try to embark on major new departures. For instance, the safeguards experience that we have gotten from the IAEA for nuclear non-proliferation are among the kind of operational instruments which we ought to be looking at in putting together notions of a regime for constraining missiles.

The problem with all of these regimes is that they are, obviously, imperfect. But what is central to them, especially the nuclear non-proliferation regime, is that we have decided that the long-term costs of proliferation are worth the short-term cost of incurring frictions with countries with whom we have relations. We decide to restrict the trade in nuclear materials because it is clearly in our national interest.

The problem with conventional weapons is that we have never been able to, at least in the past, sustain a durable, political consensus on behalf of restrictions on conventional weapons.

There are some obvious exceptions. We have been more restrictive with the export of missiles. But any effort at a comprehensive regime for restraining conventional arms has always run into the problems of defining what it is that we are trying to do, clarifying what the threat is, and deciding as a government what costs we are willing to incur in our relationship around the world, in embarking on restraint.

I think some of the discussion this morning highlights what happens when you try to move this issue into political center stage, before we really do have a clear idea of what it is that we are trying to achieve.

For example, why are missiles particularly dangerous to U.S. security? How quickly do we want to move in pursuing the goals of missile restraint? What incentives do we want to offer to countries to dissuade them from building these systems, and so forth? Many of these fundamental decisions, which would have to guide a more ambitious restraint effort have yet to be made by this administration, or are still under review.

I think that realizing the difficulty of this particular endeavor is not a reason to be fatalistic. We can move slowly and incrementally, but need not succumb to what has been a typical pattern in these efforts.

As was certainly true under the Carter administration, there was a burst of political interest and enthusiasm about constraining the international trade in arms, a lot of very active rhetoric about the United States bearing the particular onus for being a leading supplier of arms around the world, and an effort to move out to a comprehensive regime before any of the basic infrastructures for its implementation had been put in place. Over time, the discovery of the complexities and intractibilities led to a dispiritedness about the possibilities for restraint, and then the abandonment of the entire issue for almost 10 years.

Senator BINGAMAN. Let me interrupt at this point. I need to go to the floor and vote. I will come back in about 10 to 12 minutes, and we will continue with the rest of your testimony, and then Dr. Kemp's. Thank you.

[Recess.]

Senator BINGAMAN. We will start up again. We were in the middle of testimony by Dr. Nolan. And then, we will hear from Dr. Kemp, and then I will have a few questions of the whole panel.

Janne, go ahead please.

Dr. NOLAN. I was talking about the importance of having very clear objectives for the effort to constrain conventional armaments, and how difficult that has proven in the past.

In part, this is because of the centrality of arms exports to our own diplomacy. It is because of the extraordinary complexity of the instrument, which cuts across trade relationships, technology relationships, and overall diplomatic interests. And it is because of the potentially adverse affects that efforts at restraint have on bilateral or multilateral relations.

I think if we look at the Carter administration's experience, which included both a unilateral effort to constrain advanced technology exports, and efforts to engage in bilateral negotiations with the Soviet Union, that you really derive three fundamental principles about how to proceed.

The first is that it is very risky to let the rhetoric about policy objectives get out of sync with what can be sustainable politically—either in the executive branch, or in the Congress. That exaggerated expectations are almost always the undoing of the credibility of a policy.

In this case, missile control, which has been or at least seems to have been decided to be a priority of this administration, cannot be expected to regulate overall global tensions, global weapons proliferation, U.S.-Soviet rivalry, or problematic diffusion of other types of weapons, such as aircraft. In short, we need to have a very clear idea of what it is we are doing and why.

Second, the policy cannot be out of sync with overarching foreign policy. We will not be defining our relationships with key security partners entirely on the basis of this issue. There is some parallel here, I think, to efforts to control the drug trade, where we often have extreme frictions with countries about their laxity in enforcement, but we only on rare occasions hold the entire relationship of a central ally hostage to this particular priority.

And third, that we have to understand that there will be costs, short term and long term, in terms of international relationships. As I said before, however, being realistic about the objectives of this policy need not mean that you become fatalistic, and undo even the modest progress that has been achieved to date.

I think the Missile Technology Control Regime is a very significant achievement, and should not be burdened down with criticism about what it does not do. The focus should be on what it can do and shoring up needed bureaucratic resources, clarifying its guidelines, and educating the bureaucracy, as well as our international partners, about what it is that is interesting about restricting missile technology. And on that score, I would like to just say, quickly, that I think we really do have what seems to me to be a problem in terms of the disconnect between the rhetoric that has been dedicated recently to this issue, and what is being done within the bureaucracy—at least, pending the review.

With respect to bureaucratic resources, I was struck, and I mean this not facetiously, in a recent visit to the offices of the principals in the Department of Defense who deal with the missile proliferation issue. There are only four people, as Mr. Hinds said—and they do not have a xerox machine. It is a very small group of people who have to fight often extremely acrimonious battles across the inter-agency process with very little backing—at least that is what has been the case so far. The inter-agency process for taking on these fights has been left largely to the mid-level bureaucrats, at a time when it would seemingly be indicated that this is the highest priority of our own Government.

This kind of thing occurred in the Carter administration, where high level attention to arms restraint waned quickly, and it was left to mid-level people to try to implement what seemed to be American policy. But over time, this kind of bureaucratic anarchy cannot sustain a credible American posture.

I was asked to talk about what other instruments beyond export controls we might consider. In the interest of time, I am going to skip over this very quickly.

It is understood that export controls, certainly among a small number of countries, cannot sustain a comprehensive restraint regime over the long term.

Discussions do go on occasionally in the analytical community about technical restraints, or negotiated limitations on missile inventories. These measures are probably premature and unrealistic at this point, however. We are dealing with regions where the political military realities are extremely volatile. Missile range limitations, or inventory limits, would run against the problem of not even being able to delineate the parameters of the combat regions. In the Middle East, for instance, Israel considers all of the Arab States to be its military adversaries. And the Arab States, for their part, consider Israel's nuclear capabilities to vastly overshadow their conventional forces.

As such, when we start to think about technical arms control concepts, such as those which apply to the strategic context, it presupposes that one can—at least, to a rough approximation—have some understanding of what you are trying to do with respect to stability, parity, and ways to achieve defensive force postures. These concepts have derived from the years of negotiations and enabling agreements in the U.S.-Soviet context, which simply elude the current realities in regions such as South Asia, the Middle East, and many of the other problematic areas where missile proliferation is occurring.

This suggests that pursuit of missile restraint should be subsumed for now into the efforts to reach broader, political accommodations in countries that are at war. And in the interim, should focus on more modest measures, in the pursuit of confidence-building measures.

I discuss these kinds of measures in the prepared statement. Many of these are really very simple. They range from intelligence-sharing and improved communications, encouraging countries to engage in more routine bilateral, and multilateral discussions, prior notification of missile flight testing, and so forth. Examples of existing confidence-building measures include the recent agreement between India and Pakistan not to attack one another's nuclear facilities in war. And the recent agreement by Argentina and Brazil to allow for on-site inspections of their respective nuclear facilities.

Having said that, obviously confidence-building measures are no more than an indicator of political will. They certainly would not endure in a combat environment. But they should not be dismissed out of hand. It is this kind of approach which can help reduce the mystery about countries' military programs, which provide enduring channels for communications and can help contain the adverse effect of missile programs on regional tensions.

Although it should not be allowed to bear a disproportionate burden for restraint, the United States is uniquely capable of taking the lead in this area, as it has done in the past, providing the kind of technical assistance to encourage consultative mechanisms in countries where they are often genuinely unfamiliar. This should include careful consideration of the kinds of incentives that we might consider offering to countries that would help dissuade them from pursuing missile programs.

These, again, are discussed in the prepared statement, but could include offering access to space launch facilities, or the possibility of an international launch agency for countries that do not engage in indigenous space programs that may lead to missile programs, and access to high technology and other packages of economic or military incentives. What we need is a coordinated policy in the United States that really does draw on all of the expertise that is in the Government now but which has not been brought together adequately for the specific purpose of looking at missile restraint.

Thank you.

[The statement of Dr. Nolan follows:]

Testimony submitted by Dr. Janne E. Nolan

Brookings Institution

Mr. Chairman, it is a pleasure to appear before the Subcommittee today to discuss US policy options for stemming the proliferation of ballistic missiles in the Third World. Much of the recent policy debate has focused on ways to restrict the supply of missile technologies. My testimony today addresses the demand side, including the feasibility of negotiated limitations on missile inventories among Third World states.

THE PROBLEM

Growing evidence of advances in the capabilities of developing countries to develop ballistic missiles has rekindled interest in regulatory or countermilitary options to contain the security risks associated with these systems. Dramatic examples of emerging missile capabilities, such as the impending Indian test of the intermediate-range Agni ballistic missile, Iraq's successful upgrading of the Soviet SCUD missile into the Al-Abbas and Al-Hussayn systems, and last year's test of the Israeli long-range Jericho II, which has the potential to reach targets in the Soviet Union, have moved this issue to political center stage. Indeed, judging from statements by administration spokesmen, including Vice-President Dan Quayle and Director of Central Intelligence William Webster, stemming missile proliferation in the Third World would appear to be a central preoccupation of the new administration. Tangible initiatives commensurate with the rhetorical prominence being accorded to this problem, however, have yet to be revealed.

The proliferation of missile technologies in the Third World is not a new issue. Missiles and their component technologies traditionally have been singled out for more stringent export controls than any other weapon system, including high performance aircraft and naval platforms, in part because of the linkage between nuclear proliferation and missile delivery capabilities. Surface-to-surface missiles were discussed as possible systems for restraint in the US-Soviet Conventional Arms Transfer negotiations during the Carter Administration, for instance, and both the United States and the Soviet Union observed tacit restraints in transferring long-range missiles to key allies in Korea and the Middle East throughout the 1960s and 1970s. Most recently, the 1987 agreement to restrict missile-related exports under the Missile Technology Control Regime (MTCR) underscored the recognition among industrial countries that missiles pose a special risk to international security.

The spread of missile technology to the Third World, however, is partly the unintended consequence of other US policies. The US commitment to help rebuild European defense industries in the 1950s, for instance, contributed to the ascendance of highly competitive European defense firms which rely on Third World exports to sustain their commercial viability. European assistance for Third World missile production began as early as the 1960s, including French technical participation in the development of the Israeli Jericho I missile and contributions of German engineers to a variety of Middle Eastern missile programs beginning in 1962. The MTCR notwithstanding, missile-related exports continue to be perceived as important to many industrial countries' commercial and diplomatic objectives.

Similarly, the US pledge to help developing countries to acquire capabilities for self-defense, enshrined in the Nixon Doctrine in the early 1970s, encouraged key states to develop indigenous defense industries, largely through weapon coproduction contracts with the West. The provision of military production technology has been a central element of US policy towards Israel, Taiwan, South Korea, and, most recently, the People's Republic of China, among others. Conventional arms transfers also has been used as an instrument of dissuasion against states exhibiting nuclear ambitions.

For its part, the Soviet Union, though long eschewing coproduction programs outside the Warsaw Pact, has sought critically needed hard currency through accelerated weapon and space technology exports throughout the Third World, including the widespread sale of FROG and SCUD missiles.

Missile proliferation is symptomatic of the achievement of defense production capabilities in the Third World, itself a by-product of the diffusion of industrial capacity in an international economy no longer dominated by a few great powers. As was the case for the West in prior decades, the capability to produce modern weapons has become the sine qua non of national sovereignty in the Third World, often driven as much by economic and diplomatic interests as by perceptions of military threats. Despite continued dependence on developed countries for advanced technologies, emerging arms producers are seeking means to pursue national ambitions without reference to either of the superpowers or any international sanctions they may seek to impose.

At the same time, the costs and constraints of missile programs are just beginning to be appreciated by new producers. The quest for a missile production capability is not only technically arduous, but extremely expensive and potentially has adverse effects on regional relationships. The limited utility of these systems, moroever, especially the early models which lack sophisticated guidance and avionics, imposes real constraints on their contribution to relevant military capabilities. Suppliers' restrictions aside, new producers' self-interest over time may provide reasons for slowing or abjuring the development of significant missile programs. South Korean President Park's dedicated efforts to develop a long-range surface-to-surface missile in the late 1970s, for instance, which provoked objections from his own military about the program's adverse effects on other military priorities, is a case in point.

In evaluating alternatives for encouraging restraint by Third World nations, however, we must take into account both the extent to which this trend is already deeply rooted in international politics, and the continued importance accorded to the supply of military technology in advancing diplomatic interests. Any credible restraint policy must be based on the conclusion that the security threats posed by missile proliferation exceed the cost of the political frictions which may be incurred in trying to reverse these trends. Even modest restrictions on trade in missile technology will impinge on traditional interests, domestically and internationally. At a minimum, it must be clear that such initiatives are being pursued for reasons of self-interest: to stem the deterioration of security environments in which the West plans to continue military operations, and to reduce the incidence and risk of regional conflicts which could escalate to broader confrontation.

The trade-offs between maintaining cooperative relations with clients and advancing the longer-term objectives of arms regulation require careful calibration. Given the inherent complexity and political sensitivity of these issues, initial policy initiatives should be modest, to allow time for the development of a bureaucratic and diplomatic infrastructure to address this challenge systematically and to elicit enduring support. The priority of missile restraint relative to other arms control and diplomatic objectives, moreover, including negotiations on chemical weapons, security assistance, and the promotion of regional accommodations in the Middle East and elsewhere, must be weighed carefully.

Indeed, as was discovered all too well during the Carter Administration's abortive efforts at international arms restraint, attempting comprehensive restraints which prove to be politically unsupportable could be the undoing of even modest progress. Missile restraint cannot be burdened with excessive expectations, or be at odds with overarching foreign policy goals. Even if achievable, limitations on missiles inventories will not resolve regional tensions, regulate US-Soviet military rivalry, or serve as a panacea to global weapons proliferation.

Realism need not be a pretext for fatalism. The proliferation of ballistic missiles cannot be reversed or eliminated, but some of its most troublesome aspects probably can be contained. As has been demonstrated in the nuclear non-proliferation area, even an imperfect restraint regime has proven preferable to a laissez-faire approach which would have permitted unrestricted trade in nuclear materials.

PROSPECTS FOR ARMS CONTROL

Any effort to encourage international restraint in the development and use of ballistic missiles will require both carrots and sticks, reducing demand not only by raising the costs to countries engaged in missile programs (the goal of export controls and trade sanctions), but by increasing the benefits associated with consent to limitations. Restraint measures, in other words, ultimately must appeal pragmatically to states' sovereign interests and cannot be seen as a conspiracy among industrial countries aimed solely at preserving traditional great power prerogatives.

Technical arms control instruments, which have been developed largely from efforts to reduce nuclear forces, are not likely to be feasible as a means of limiting missile proliferation in the Third World at this stage. But examining why technical limitations -- such as negotiated numerical ceilings on missiles and warheads, constraints on the ranges of missiles, flight test bans, and limitations on deployment areas -- are not particularly applicable may help to illuminate some of the factors which will have to be considered in developing more workable restraint policies.

A. Numerical ceilings:

Agreed ceilings on the number of particular types of weapons in nuclear inventories, a mainstay of strategic force reductions, presupposes that one can calculate to at least a rough approximation equivalencies in weapon types, and agree that lower levels of such weapons are a step towards enhancing stability. Alternatively, it requires agreement to accept asymmetries in certain categories of weapons in return for offsetting limits in other areas. In both cases, the definition of desirable limits derives from a common understanding of what is needed to achieve overall military parity, the conditions for which must be reasonably within reach.

Such assumptions cannot be applied readily to the Third World. The task of defining regional balances is more complicated than assessing the strategic balance, as we ourselves have learned from the Vienna talks on European conventional forces. In the Middle East, for instance, Israel counts the inventories of the Arab and Persian Gulf states as a collective threat to its security and, as such, pursues qualitative superiority to offset these states' numerical superiority in conventional weaponry and military manpower. The Arab states, on the other hand, consider Israel's nuclear capability to vastly outweigh their existing conventional capabilities, which they aim to augment as sovereign countries. The problem is exacerbated by the lack of political consensus among Arab states. Inter-Arab antagonisms, including tensions between Syria and Jordan, Egypt and Libya, and among Saudi Arabia, Syria and Iraq, would preclude negotiations requiring them to act collectively.

Patterns of regional enmity supercede traditional territorial boundaries in the Middle East and many other conflict-prone regions, further complicating the delineation of a regional framework suitable for negotiations. Saudi Arabia, for instance, looks to both Iran and Israel as regional threats. In South Asia, India perceives China to be as much a part of the military calculus as its more proximate adversary, Pakistan. The basis for defining coherent regions, in other words, let alone for developing common concepts of parity or stability, simply elude current political-military realities.

The possibility for negotiated numerical limits might seem more promising in Latin America, dominated by the military rivalry between Brazil and Argentina. The problem posed by indigenous missile development in this case, however, stems less from proximate military tensions than from their aggressive export programs. As such, the issue is more aptly considered as one requiring economic or trade incentives to encourage deceleration of missile production and exports rather than arms control.

B. Range Limitations:

Given the current state of missile capabilities in the Middle East and possibly South Asia, the negotiation of equitable range limitations which are meaningful militarily is difficult to envisage. Inventories in Israel, India, and even Saudi Arabia contain missiles whose ranges are well beyond what could be considered an acceptable standard for restraint. The CSS-2 missile in the Saudi inventory has an approximate range of 2,700 kilometers, while the Israeli Jericho II can deliver certain types of warheads up to at least 1400 kilometers. Israel's recent launch of the Ofek I satellite by an indigenously produced Shavit rocket suggests an emerging capability for a ballistic missile with range upwards of 7500 kilometers.

Limitations on missile ranges thus would confront three possible alternatives: banning systems which exceed a set range limit, even if they have already been flight-tested or deployed; making exceptions for certain systems, and therefore freezing in place disparities in arsenals; or allowing all participants to match the range capabilities of the most advanced regional power. In the case of the Middle East and South Asia, the first two likely would be politically and militarily unacceptable, and the last would essentially vitiate the meaning of range limitations entirely.

In any case, the proximity of adversarial states in these regions would make it impossible to negotiate range limitations which are low enough to be significant militarily. The Syrian SS-21, for instance, is certainly not a long-range missile, but the 174 miles it can fly in less than five minutes would pose a very serious threat to Israeli military targets. Range limitations also would be difficult to verify. Missiles can be adapted to longer-ranges by adjusting payloads or altering rocket engine efficiency , and although this may still be technically difficult for some states, restraints on conversion efforts would be difficult to enforce.

C. Deployment Limitations:

Agreements to delimit missile deployment areas -- moving forces away from borders, for instance, and declaring fixed deployment sites which could be monitored -- could reduce the threat of surprise attack and, in principle, be a stabilizing measure. Like other technical limitations, however, geographic and political conditions may mitigate the relevance of such an instrument in many countries absent broader regional security arrangements. In addition to the problem posed by mobile missiles like the Syrian SS-21, the range capabilities of newer missile systems and the short distances between targets would render arrangements for fixed deployment areas meaningless without elaborate monitoring and enforcement mechanisms.

The delineation of deployment zones, however, is not without successful precedent, and could be an important element of a more comprehensive regional or bilateral security pact. The arrangements contained in the Sinai Demilitarization Agreement, for instance, which provide for peacekeeping forces and other enforcement mechanisms to monitor proscribed military activities in the area, is an important achievement which has helped enhance stability and mitigate tensions between Israel and Egypt since 1974.

Achieving this kind of agreement in other contexts, however, presupposes a level of political and military stability which to date has eluded diplomatic efforts, particularly in the Middle East. Even more modest efforts, like the Chinese proposal to declare a nuclear-free zone between China and Tibet, intended to reassure India that China does not target it with its nuclear forces, have so far proven elusive.

D. Flight Test Bans:

Some have suggested that the United States and other developed nations could press for a universal ban on testing ballistic missiles. A test ban would be aimed at stopping the development of new missiles by making it difficult to achieve full operational capability.

This proposal is problematic on both technical and political grounds. It is not at all clear that the United States and the Soviet Union, let alone the European nuclear states, would ever agree to forego missile testing, a proposal which has been raised informally for years but has never been considered seriously by governments. Cessation of testing, moreover, is of questionable technical significance in the Third World. Most emerging missile producers, unlike developed countries, do not have elaborate testing programs. Although an agreement to stop missile tests in principle could slow the pace of technical improvements, its contribution to the containment of missile proliferation still would be marginal.

OTHER OPTIONS

The problems posed by technical arms control measures illustrate the difficulty of trying to forge agreements among countries where the conditions for even minimal political cooperation are weak. For such measures to become pertinent, progress towards political settlements in these regions would have to be far more robust than is the case today.

This suggests that the pursuit of a comprehensive missile restraint regime should be subsumed into ongoing efforts to end regional conflicts. In the interim, efforts should focus on more modest instruments aimed at containing the adverse consequences of programs already underway, and to try to develop the foundations to encourage restraint in the future. Confidence-building measures (CBMs), including information and intelligence exchanges, on-site visits of defense production and space launch facilities, prior notifications of missile tests, and other mechanisms to promote consultation among regional rivals could help ease unwarranted suspicions about missile production efforts, limit their political and military consequences, and, perhaps, reduce some of the incentives now propelling the expansion of these programs.

CBMs can reduce tensions by reducing the mystery surrounding rivals' military activities, providing channels for routine interactions, and demonstrating adversaries' interests in reassuring other states about their military objectives. Although these instruments are only valuable as indicators of political will and can be violated at any time, they can serve as the beginnings of the diplomatic infrastructure needed for broader accomodation.

Examples of existing regional CBMs include the recent agreement between India and Pakistan not to attack one another's nuclear facilities and to begin negotiations of a nuclear test ban; the process of on-site visits to nuclear facilities and exchanges of information being pursued by Argentina and Brazil; and informal discussions in the US government of proposals to encourage Middle Eastern countries to abjure the "first use" of ballistic missiles and to give prior notification of missile launches.

Declarations of intent, like a pledge not to use ballistic missiles preemptively, would obviously not endure in crisis, but they are nevertheless signs of political conciliation which should not be dismissed out of hand. Similarly, on-site visits and prior notifications of test launches do nothing to stop dedicated missile programs, but they can help to reduce the consequences of such actions.

Other CBMs that could be considered include the application of international safeguards and on-site verification at space launch facilities to ensure they are not being used to develop missiles; the development of an international space launch agency to give countries access to space in return for not producing their own space-launch vehicles; regional export controls, such as agreements not to sell missiles to terrorist states; and routine bilateral military exchanges between rival states to discuss common security concerns.

The United States can play an important role in encouraging regional powers to pursue CBMs, although the choice of initiatives must ultimately come from the states themselves and reflect local realities. As a first step, the United States can take the lead in helping countries to develop routine consultative mechanisms for exchanges of information about military programs, discussions of mutual security concerns, and, over time, consideration of more ambitious arms control measures. As in the case of the NPT, the United States is a source of leadership and operational expertise about such mechanisms which are often genuinely unfamiliar to Third World countries.

Indeed, even US assistance in such prosaic areas as customs enforcement, automated data collection for assessing force balances, or mechanisms to monitor exports, can prove useful. Such assistance was apparently decisive in enabling the PRC government to place tighter controls over its export of missiles, for example.

The effectiveness of US diplomatic efforts will require avoiding an exaggerated political profile, almost always the undoing of sensitive diplomacy. The United States and its western allies should not bear disproportionate responsibility for encouraging restraint, moreover. Other missile suppliers, including certain neutral countries, the PRC, and the Soviet Union, must be induced to cooperate. Given the sensitivity of these issues for most developing countries, regional and bilateral demarches aimed at working out private understandings and tacit cooperation for missile restraint would be a reasonable first step.

It is not clear that the US bureaucracy is prepared to undertake the kind of commitment to missile restraint which is implied by administration rhetoric. One basic issue still open to debate is the priority the administration plans to give to national and international regulatory mechanisms for stemming missile proliferation. Another fundamental issue is whether the United States is prepared to offer client states incentives for their forbearance in missile acquisition, and, if so, what kind. As of now, the absence of effective coordination among agencies which have jurisdiction over trade policy, security assistance, economic assistance, sensitive technology transfers, space policy, and arms control, among others, makes it difficult to design coherent policies based on the consideration of the full range of policy alternatives.

POSSIBLE ADDITIONAL INITIATIVES

-- An International Missile Conference, under neutral auspices similar to the recent Paris conference on chemical weapons, to permit a full airing of all countries' views on these matters and to set a framework for possible international cooperation;

-- Additional resources for intelligence gathering and assessment related to the monitoring of the trade in missiles. Improved intelligence capabilities could help save resources in the long term by shifting the emphasis of restraint policies towards prevention of proliferation, rather than the more demanding process for inflicting punishment after the fact;

-- The President's Space Council should be encouraged to play a constructive role in advancing missile restraint objectives. The Space Council could be especially helpful in devising incentives for countries to agree to abjure missile development, such as greater access to US space launch facilities and technical assistance in related areas. The Council could also be called on to assess the feasibility of an international space launch agency, and to take the lead in analyzing ways to counter the security challenges posed by the proliferation of military space technology in the long-term;

-- Consideration should be given to how export restraints for sensitive technologies could be operationalized as part of the threat assessment projections conducted by the military services and the Joint Staff, to establish criteria for controlling futuristic technologies whose proliferation pose threats to US force projection;

-- Review the policies of the international lending agencies, such as the World Bank and the International Development Agency, to ensure that their assessments of countries' eligibility for credits and loans take into account the influence of the military sector, including the nature and relative burden of weapon production programs. Agencies with responsibilities for debt reservicing and other concessionary financial transactions need to be brought into the policy process to see if there may be ways to link financial incentives to desirable military restraint. Consideration should be given to the proposal to establish an International Development Coordination Council in the White House to help ensure routine and coordinated attention to Third World policy by senior officials;

-- Challenge all countries to abide by an international embargo on missile exports to terrorist states, including Libya and Iran.

-- Elicit the support of US and international defense industries to help in the conception of realistic missile restraint policies, similar to the assistance provided by US chemical industries to the negotiations for a ban on chemical weapons. A joint government-industry consortium could assist in assessing empirically the costs of forgoing missile development programs, and assist in making more informed judgments about the relative feasibility of alternative instruments.

CONCLUSION

At a minimum, Congress should seek reassurance that ballistic missile proliferation has been included in the administration's ongoing strategic review, and that concrete policy guidelines actually emerged from this exercise. An annual reporting requirement asking for an assessment of the progress of missile non-proliferation and the MTCR would be a modest way to ensure routine Congressional oversight in this area and encourage high-level attention within the administration.

In the final analysis, the fundamental challenge posed by missile proliferation is the extent to which the industrial countries believe they have sufficient leverage, and an interest in applying that leverage, to exert meaningful influence over clients' military ambitions. The MTCR is based on the shared assumption among its signatories that industrial countries' control of advanced technology is a prerogative which legitimately can and should be protected. At the same time, consensual export controls among a few suppliers are understood to be an insufficient basis of an enduring restraint regime, which eventually must involve cooperation among a wider number of countries to avoid circumvention by non-participants. Basic decisions about how to approach this challenge, however, including which countries to target, with what instruments, and at what cost, have yet to be made. A practical strategy for missile restraint which can win domestic political support is the first requirement.

Senator BINGAMAN. Thank you very much.

Our final witness today is Dr. Kemp. We appreciate your willingness to stay through the rest of the testimony, and look forward to your testimony.

STATEMENT OF DR. GEOFFREY KEMP, CARNEGIE ENDOWMENT FOR INTERNATIONAL PEACE

Dr. KEMP. Thank you, Mr. Chairman. I appreciate this opportunity to testify before this committee on the proliferation of ballistic and cruise missiles to the Third World.

I offer a short statement based on ongoing work we are doing at the Carnegie Endowment.

Mr. Chairman, I have been asked to comment on the demand side of the missile proliferation equation. Why is it that so many countries in the Third World, but particularly, the near East and south Asia are developing, or purchasing missiles?

I think it is very important that we understand the motives of the recipients, and in particular, what they think about our attempts at arms control, and our concerns about proliferation, if we are to make sense of this very complicated and very dangerous subject.

I should say at the outset that I do not believe it is possible to stop the spread of ballistic missiles, particularly to conflict regions in the near East and south Asia.

I do believe that with sensible diplomacy, sensible laws, we can limit the threats posed by this phenomenon.

In saying this, however, I am sometimes troubled by the insensitivity we show to the security needs of some of our friends in the Third World. We treat them, along with our adversaries, such as Libya and Syria, as part of "the problem." We convey to them a strong message that we do not trust them.

They, in turn, believe our current policy on missile proliferation—indeed, all arms transfers, is riddled with inconsistencies and is frequently hypocritical. For instance, we sell the most sophisticated, long-range missile system in the world—the Trident to Britain. We publicly urge West Germany to develop a new short range attack missile for deployment in the European theater. At the same time, we, and the six industrial allies, including Britain and Germany, have formed the Missile Technology Control Regime, which has the objective of denying missile technology to the Third World, including our friends, such as Israel, Egypt, India and Pakistan.

Now, although the Missile Technology Control Regime represents a serious and genuine attempt to deal with a real problem, unlike the proposed chemical and biological warfare convention, and to a lesser extent, the Nuclear Non-Proliferation Treaty, it is discriminatory and offers no incentives to Third World countries to place limits on their ballistic and cruise missile capabilities.

It does, as I say, put India and Israel into the same category of countries as Syria and Libya.

Let me then turn to the demand side itself. It is important to remember that the industrial powers have been very good teachers when it comes to arms procurement. The philosophy that has guided post-war NATO strategy, has stressed the importance of high technology as a means to offset the quantitative superiority of the Warsaw Pact.

Modernizing and upgrading Western missile forces has been a cornerstone of our deterrent posture, and in some circumstances, has been justified as a major contribution to arms control.

It is very difficult then, to make the strategic case that the Third World countries have no need for such high technology items. Indeed, the basis for the United States security policy in the Third World for the past two decades has been based on the premise that it is very much in our interests to see that our friends and allies have modern, military forces.

It is, for instance, bipartisan policy to assure that Israel retains its qualitative edge, vis-a-vis, its neighbors. And not surprisingly, the most sophisticated missile program is found in Israel.

Israel's motivations for developing the long range missile, with nuclear warhead, derived from its perceived strategic vulnerability and its fear that in the last resort, it will be overwhelmed by the conventional military superiority, strategic depth, and financial resources of its Arab adversaries.

Egypt's missile program dates back to the 1960s. Egypt's motivations originally had to do with its adversarial relationship with Israel. Now, the logic is more political. So long as Israel has missiles and nuclear weapons, Egypt believes it needs a sophisticated capability to help offset Israel's technological superiority.

Syria's surface-to-surface missiles, purchased from the Soviet Union, pose a potential threat to Israel's military facilities and cities. And although they do not yet appear in large numbers, they could ultimately have a decisive impact on the balance of power, if the Soviets were prepared to provide substantially more.

So far, the new Soviet leadership has shown restraint in this regard, which is a welcome development.

The Syrian missile capability is, in turn, a strong motivation for Israel to develop the Arrow ATBM, which the United States is hoping to finance. If the Arrow program is successful, it will enhance Israel's overall military posture, and will, therefore, be seen as a threat by the Arabs.

In the early days of the Iran-Iraq War, Mr. Chairman, Iran was able to fire missiles against Baghdad. Iraq could not respond with its Soviet-purchased SCUDs, because they did not have the range.

The Iraqis inevitably took steps to upgrade their SCUDs, modify them—they developed their own missile, the Al-Husayn, which last year was used against Tehran. It proved to be highly effective as a psychological, or terror weapon.

In view of the latent hostility between Iran and Iraq, and Iraq's belief that the Iranian threat will not diminish, even if Khomeini dies, Iraq will continue to develop and refine its missile programs.

The Saudi Arabian case exemplifies, I think, a lot of our dilemmas on missile sales and, indeed, on all arms sales. The Saudi missile deal with China was a surprise to the intelligence community.

If one talks to the Saudis about motives, two issues always come out. First, the Saudis felt very vulnerable during the Iran-Iraq War, when two powerful countries on their border were shooting missiles at each other.

The Saudis could not deter the Iranians, who had made it clear that under certain circumstances they would attack Saudi Arabia.

The Saudis had made numerous efforts to upgrade and increase their fleet on U.S. F-15 aircraft. But the politics of Capitol Hill denied F-15 follow-ons. The Saudis then decided to go to the Chinese and do something very dramatic, in part, to demonstrate their independence from the United States.

The irony is, that if the United States had wanted to prevent this missile transfer, it would have had to increase its sales of advanced aircraft and other technologies to Saudi Arabia.

Libya is a case all on to its own. Libya's motivations to purchase missiles, chemical weapons, and even nuclear weapons are well documented. And the dangers of Colonel Quaddafi need little elaboration. But, given its minimal infrastructure and the paucity of skilled engineering talents, Libya is entirely dependent on outside sources.

In my judgment, Libyan missile potential is truly destabilizing and is as worrying to Egypt as it is to Israel. Because Libya, and to an extent Syria are isolated, radical states, with litle indigenious capability, bilateral diplomacy should be used to limit their capabilities, as well as the multinational efforts of the MTCR.

Perhaps the most difficult case, Mr. Chairman, concerns India. India is determined to become a world power, with all its traditional accoutrements, including military power projection and nuclear potential.

India's motivations have as much to do with China's military capabilities as with Pakistan's. They also derive from India's sense of history, and its determination not to be dictated to by existing nuclear powers, particularly the United States and the Soviet Union.

India's emergence as a regional power is exemplified by its recent peacekeeping operations in Sri Lanka and the Maldives. Actions I should note that the U.S. Government fully endorsed.

Treating India like Libya, in my judgment, Mr. Chairman, is foolish. It merely encourages the Indians to go their own independent way, and makes it more difficult to reach agreements with them on other, more important arms control issues.

The best way to limit the dangers of the arms race is for the United States to work closely with the regional powers to erode the longstanding sources of conflict. A peace treaty between Israel and its neighbors will do more to reduce the risks of war than ad hoc arms control measures, prior to a peace settlement.

Now, it is true, there is nothing inherently inconsistent in a two-track policy, especially since a peace treaty is not imminent. Yet, the reality is that so long as everybody feels threatened by everybody else, it is difficult to persuade local leaders to forego cutting edge military technologies.

I do not believe that a highly visible and publicized effort by the administration and the Congress to curb the flow of missiles to the Third World will work, so long as we insist on putting all Third World countries into the same category.

We would do better to focus on quiet diplomacy—to deal on ad hoc basis with the specific proliferation issues that pose the most immediate threats to our security.

This means, among other things, working with the Soviet Union to put limits on Libyan and Syrian missile inventories.

Persuading Israel that it is not in its interest to deploy nuclear capable missiles that can reach the Soviet Union.

Trying to find some way to retrieve the large numbers of Stinger missiles and similar Soviet equipment in Afghanistan.

Working with India and Pakistan to keep their prospective nuclear weapons in the basement and out of the reach of others.

Encouraging the newly formed Arab Cooperation Council, consisting of Egypt, Iraq, Jordan and Yemen to use their growing political clout to further the peace process with Israel.

And perhaps, most important, coordinating our own policies. Arms control is a tool for reducing the risks of conflict, not an end in itself.

[The statement of Dr. Kemp follows:]

TESTIMONY OF GEOFFREY KEMP

Mr. Chairman,

I appreciate this opportunity to testify before the Committee on the problem of ballistic and cruise missile proliferation in the Third World. I will now offer a short statement. With your permission, I would like to submit for the record a longer paper which draws upon our on-going work on this subject at the Carnegie Endowment.

I have been asked to comment on the demand side of the missile proliferation equation. Why is it that so many countries in the Third World, but particularly the Near East and South Asia, are developing, or purchasing, surface-to-surface missiles? To what extent does this demand follow a clear pattern? To what extent are there unique reasons for each case? It is important that we understand the motives of the recipients and what they think about our attempts at arms control and our concerns about the dangers of proliferation.

I should say at the outset that I do not believe it is possible to stop the spread of ballistic missiles, particularly to conflict regions in the Near East and South Asia. I do believe that with sensible diplomacy and sensible laws we can limit the threats posed by this phenomenon and can do so in cooperation with many of the countries in the region. We can also slow down the rate at which certain countries, whose behavior we find most disturbing, acquire sophisticated missile technologies.

In saying this, however, I must confess, Mr Chairman, that I am sometimes troubled by the insensitivity we show to the security needs and political perceptions of our friends in the Third World. We treat them -- along with our adversaries such as Libya and Syria -- as part of "the problem". We convey to them a strong message that we don't trust them to be responsible with modern military equipment. They, in turn, believe our current policy on missile proliferation, indeed all arms transfers, is riddled with inconsistencies and is frequently hypocritical. For instance, we sell the most sophisticated long-range missile system in the world, the Trident, to Britain. We publicly urge West Germany to develop a new short-range attack missile for deployment in the European theater. These countries, after all, are members of NATO. At the same time, we and our six industrial allies, including Britain and Germany, have formed the Missile Technology Control Regime (MTCR) which has the objective of denying certain missile technology to the Third World including our friends such as Israel, Egypt, India, and Pakistan.

One problem with the Missile Technology Control Regime is that, unlike the proposed Chemical and Biological Warfare Convention and, to a lesser extent, the Nuclear Non-proliferation Treaty (NPT), it is discriminatory and offers no incentives for Third World countries to place limits on their own ballistic and cruise missile capabilities. It puts India and Israel into the same category of countries as Syria and Libya: in some ways it is analogous to the efforts by the "advanced powers" in the 19th Century to deny the tribes of Africa and the peoples of the Pacific Islands fire-arms and liquor on the grounds that they would mishandle them.

While the Missile Technology Control Regime represents a serious and genuine attempt to deal with an acknowledged problem, we should be aware of its limitations and the antagonisms it creates in many Third World capitals. We should also acknowledge that the restraints it attempts to impose may, in certain circumstances, encourage some countries to violate, or get around, its clauses. Until its membership is expanded to include the Soviet Union, China, Argentina, Brazil and eventually India, Israel, Egypt, and Iraq, its power will remain limited.

Let me now address the demand side itself and touch upon several examples, particularly in the Near East and South Asia. The first point to note is that the industrial powers have been good teachers when it comes to arms procurement. The underlying philosophy that has guided post-war NATO strategy has stressed the importance of high technology as a means to offset the quantitative superiority of the Warsaw Pact. Modernizing and upgrading Western missile forces has been a cornerstone of our deterrent posture and in some circumstances has been justified as a major contribution to arms control. It is very difficult, then, to make a strategic case that Third World countries have no need for such high technology items. Indeed, the basis for U.S. security policy in the Third World for the past two decades has been based on the premise that it is very much in our interests to see that our friends and allies have modern military forces. It is bipartisan policy to assure that Israel retains its "qualitative edge" vis-a-vis its neighbors.

Not surprisingly, the most sophisticated missile program is found in Israel. Israel may have the capability to deploy an ICBM and target cities in the Soviet Union as well as the entire Arab world. Israel's motivation for developing a long-range missile with a nuclear warhead derives from its perceived strategic vulnerability and its fear that, in the last resort, it will be overwhelmed by the conventional military superiority, strategic depth and financial resources of its Arab adversaries.

Egypt's missile program dates back to the 1960s. Egypt's motivations originally had to do with its adversarial relationship with Israel. Now the logic is more political: so long as Israel has missiles and nuclear weapons, Egypt believes it needs a sophisticated capability to help offset Israel's technological superiority.

Syria's surface-to-surface missiles, purchased from the Soviet Union, pose a potential threat to Israeli military facilities and cities and, although not yet present in large numbers, could have a decisive impact on the balance of power if the Soviets were prepared to provide substantially more. So far the new Soviet leadership has shown restraint in this regard, which is a welcome development. The Syrian surface-to-surface missile capability is a strong motivation for Israel to develop the Arrow ATBM which the United States is helping to finance. If the Arrow program is successful, it will enhance Israel's overall military posture and therefore will be seen as a threat by the Arabs.

In the Iran-Iraq case the use of surface-to-surface missiles during the early stages of the war invariably led to further investments and upgrading of existing systems. In the early days of the war, Iran was able to fire missiles against Baghdad but Iraq could not respond because its Soviet-purchased Scuds did not have the range. The Iraqis were able to modify the Scuds and develop their own missile, the Al-Hussein, which, last year, was used against Teheran. It proved to be highly effective as a psychological weapon. In view of the latent hostility between Iraq and Iran, and Iraq's belief that the Iranian threat will not diminish even if Khomeini dies, Iraq will continue to develop and refine its missile programs. Iraq is currently hosting the first Baghdad International Exhibition for Military Production subtitled "Defense Equipment for Peace and Prosperity." Over 30 countries have agreed to participate including Britain and France. One Iraqi report said Iraq intends to put on display over 200 new military items developed by its engineers during the war. This capability worries the Israelis who believe there is a possibility that Iraqi arms may be used against them. This is most likely to happen if Israel attempts to use its airpower once more to bomb Iraqi installations, such as chemical weapons production plants. Iraq remembers the humiliation it suffered in June 1981 when Israel conducted the raid against its nuclear reactor at Osiraq. Iraq wants the capability to deter such an Israeli attack in the future. Iraq sees "high technology" as a way to deter Israel but, much more important, as a way to compensate for Iranian geographic and demographic advantages.

The Saudi Arabian case exemplifies the U.S. policy dilemma on missile sales. The Saudi missile deal with China was a surprise to the U.S. intelligence community. If one talks to the Saudis about motives, two issues always come up. The Saudis felt very vulnerable during the Iran-Iraq war when two powerful countries on their border were shooting missiles at each other. The Saudis could not deter the Iranians, who had made it clear that they would attack Saudi Arabia if the conditions were right. The Saudis had made numerous efforts to upgrade and increase their fleet of U.S. F-15 aircraft, but the politics of Capitol Hill denied F-15 follow-ons. The Saudis then decided to go to the Chinese and do something very dramatic, in part to demonstrate their independence from the United States.

The irony is that if the United States had wanted to prevent this missile transfer, it would have had to increase its sales of advanced aircraft and other technologies to Saudi Arabia.

Libya is a case all unto its own. Libya's motivations to purchase missiles, chemical weapons and even nuclear weapons are well documented; and the dangers of Colonel Qaddafi need little elaboration. But given its minimal infrastructure and the paucity of skilled engineering talents, Libya is entirely dependent on outside sources. In my judgment, Libyan missile potential is truly destabilizing and is as worrying to Egypt as to Israel. Because Libya and, to an extent, Syria are isolated, radical states with little indigenous capability, bilateral diplomacy should be used to limit their capabilities as well as multilateral efforts such as the MTCR.

Perhaps the most difficult case concerns India. India is determined to become a world power with all its traditional accoutrements, including military power projection and nuclear potential. India's motivations have as much to do with China's military capabilities as with Pakistan's. They also derive from India's sense of history and its determination not to be dictated to by the existing nuclear powers, particularly the United States and the Soviet Union. India's emergence as a regional power is exemplified by its recent peacekeeping operations in Sri Lanka and the Maldives, actions, I should note, that the U.S. government fully endorsed. The Indians are angry at our efforts to deny them high technology on the grounds that they somehow will be "irresponsible" if they have long-range missiles. Treating India like Libya is, in my judgment, foolish. It merely encourages the Indians to go their own independent way and makes it more difficult to reach agreements with them on other important arms control issues.

Although surface-to-surface and cruise missiles have unique and disturbing characteristics, their true military utility in the Third World cannot be measured in isolation from the overall force postures of the regional players. The initial motivation to stop missile proliferation derived from fears about nuclear proliferation. The three countries in the Near East and South Asia that have nuclear weapons capabilities (India, Israel, and Pakistan) happen to be good friends of the United States. The focus of arms control efforts on missiles, while understandable, only touches upon the broader problem of the Near East arms race.

The best way to limit the dangers of the arms race is for the United States to work closely with the regional powers to erode the longstanding sources of regional conflict. A Peace Treaty between Israel and its neighbors will do more to reduce the risks of war than ad hoc arms control measures prior to a peace settlement. True, there is nothing inherently inconsistent in a two-track policy, especially since a peace treaty is not imminent. Yet the reality is that so long as everybody feels threatened by everybody else it is difficult to persuade the local leaders to forego cutting edge military technologies.

I do not believe that a highly visible and publicized effort by the administration and the Congress to curb the flow of missiles to the Third World will work so long as we insist on putting all "Third World" countries into the same category. What such an effort will do is arouse the deepest suspicions and assure that even more stringent efforts are made to get around U.S. or Western restraints.

Unless we are prepared to face up to the anomalies of our own policies, we would do better to focus on quiet diplomacy to deal, on an ad hoc basis, with the specific proliferation issues that pose the most immediate threats to our security. This means, among other things, working with the Soviet Union to put limits on Libyan and Syrian missile inventories; persuading

Israel that it is not in its interests to deploy nuclear capable missiles that can reach Russia; trying to find some way to retrieve the large quantities of Stinger missiles and similar Soviet equipment in Afghanistan; working with India and Pakistan to keep their prospective nuclear weapons in the basement and out of reach of others; encouraging the newly formed Arab Cooperation Council consisting of Egypt, Iraq, Jordan and the Republic of Yemen to use their growing political clout to further the peace process with Israel; and, perhaps most important, coordinating our own policies, taking into account that arms control is a tool for reducing the risks of conflict, not an end in itself.

Senator BINGAMAN. Thank you very much. I have just a few questions.

Dr. Carus, you referred to the proliferation of cruise missiles and the fact as I understand it that this global positioning system will facilitate the ability of Third World countries to use cruise missiles. What do you suggest we do to deal with that growing threat?

Dr. CARUS. Unfortunately, I am not sure there is much we can do. Not only is there a competing system—a Soviet GLONASS system which will also be available and which will provide similar kinds of accuracies—but the decision to make the systems available on a commercial basis to airliners, shipping, perhaps even for use in automobiles, essentially means that anybody is going to gain access to it.

The Department of Defense has taken steps to ensure that the publicly-available signals are not as accurate as those available to the Department of Defense. However that means that instead of getting 15 meter or less accuracies they will have 100 meter accuracy, which for a great many purposes is all you need. Unfortunately I do not think there is anything we can do about this.

Senator BINGAMAN. That is not exactly a heartening approach to the world, but it may be accurate.

Dr. Nolan, let me ask you—what would you recommend to Secretary Cheney that he do in the Department of Defense to make sense out of the implementation of policy—establishment and implementation of policy in DOD? I guess there is—you alluded to the problems that the Department has in getting its own act together on this. What do you recommend the new Secretary do to solve this?

Dr. NOLAN. Well, first I would say that it is not uniquely a problem for the Secretary of Defense. I think that the problem begins at higher levels. The fundamental decision about what resources to dedicate to this issue might begin with a consideration of establishing a White House-based policy Coordination Committee, it could be also based at State or Defense. Someone has to be in charge.

The first order of business is to ensure that there is routine high-level attention to this priority commensurate with the rhetoric.

In the Department of Defense, I think there are a number of very practical problems. The level of resources dedicated to the extraordinarily arduous task of going over license requests do not seem adequate. Second, DOD should have the right to referral for license requests ensuring that the appropriate personnel in the Proliferation Bureau have the right to look at all licenses that may come through Commerce channels, that may come through Munitions Control channels and so forth. This is needed to make sure that they really do have the proper authority to decide which licenses they should be reviewing. A lot of these suggestions sound like excessively prosaic technicalities, but often the seriousness of the policy has to do with the strength of its enforcement procedures.

Third, I think that there needs to be a very activist interagency process that is backed up by high level leadership. There will naturally be tensions and divisions among agencies about how to interpret policy, but it should not be left to mid-level people who represent those agencies to work these out.

This was one of the downfalls of the Carter administration's efforts. Bureaucratic sabotage sets in when there is no bureaucratic discipline imposed from above to say this is indeed a priority and that we are prepared to incur the cost and frictions which may arise in pursuing this priority.

Finally, as a longer-term proposal, we need to be thinking about how to incorporate criteria about sensitive technologies and their exports as part of our military threat assessments. This should be incorporated as a part of our routine security planning, an activity that could be conducted by the Joint Staff and by the services. We need to be thinking about what long-term technological proliferation trends we can have at least some influence over through export restraints. Today's ballistic missile and cruise missile may be tomorrow's ASATs. That should be very much a part of our 5-year or 10-year threat assessment considerations.

Senator BINGAMAN. You also have a suggestion in your written statement about international lending agencies prior to approving loans and credits taking into consideration the policy that some of these countries are pursuing with regard to transfer of technology. Could you elaborate a little bit on how that might work in some specific cases?

Dr. NOLAN. I think that the fundamental point is that it is atavistic to continue to look at economic assistance and economic development as separate from security, and that agencies that are charged with managing concessionary instruments often have no interest and no expertise in security matters. There should be active consideration of what is occurring in the defense sector of a particular country, as it might be affecting its overall economic performance, or may even be vitiating the effectiveness of the assistance that we are trying to provide.

Obvious cases that come to mind are Brazil and Argentina, two countries that are engaged in missile production strictly or largely for commercial reasons. As we are in the midst of extremely sensitive negotiations with them about debt reservicing and other kinds of diplomatic/economic concessions, we really ought to be taking fully into account what leverage, if any, there might be for also influencing their military programs. There is potentially an inherent contradiction here since these countries do seek export revenues from their missiles to balance their trade deficit.

Overall, the point is that we need to bring into line our institutional arrangements with the realities of the late 20th century. You cannot separate economics from security, or missile proliferation from overall technology trends. I think that was brought to light in the recent House report on how to realign our multilateral lending agencies, which has some very interesting proposals.

Senator BINGAMAN. Dr. Kemp, you indicated India was perhaps the most troublesome of the various issues, or how to deal with the issue of proliferation of missile technology to India as being one of the most troublesome that we have. Do you think India would agree to a bilateral accord not to export missile technology?

Dr. KEMP. I said difficult case, Mr. Chairman. From an American perspective what India is doing is not nearly as troublesome as what other countries are doing. I think it is the most difficult case, because it is an aspiring great power that has the capability to go it alone whether we like it or not and it may take longer, but they will get there in the end.

Therefore, my view is that there are so many other things we need to work closely with the Indians on, particularly to put a lid on nuclear proliferation within the subcontinent. I would be much happier if we could work with both India and Pakistan to assure that they do not allow nuclear technology to spill out of the subcontinent into other regions of the world, particularly the gulf and the Near East. This would be a more advantageous arms control objective for us than slowing down the rate at which India acquires an IRBM by 1 or 2 years, or making the missile that they actually get just a little bit less accurate than the one they're going to get anyway.

So it is a question of tradeoffs and I really do think that by putting so much emphasis on one particular component of an enormous array of technologies which are going into the Third World we distort the strategic reality, particularly when you look at a case like India.

Senator BINGAMAN. So your basic position is that we should not do anything with regard to India that would jeopardize—do anything in the area of control of missiles, technology proliferation, that might jeopardize our ability to move ahead in other areas?

Dr. KEMP. Well, yes, I am not saying we should allow India an open access to every piece of technology we have. What I am saying is I think we should negotiate very toughly on a bilateral basis with India for each item that they show an interest in, rather than apply carte blanche the provision of the MTCR which forbid us, really, to do anything in the high tech missile field.

Senator BINGAMAN. It is almost 12:30 and that is a half an hour longer than we had anticipated for the hearing. Let me thank all of you very much for testifying, and we have got some good information out of the hearing. I hope we can follow up on some of it. Thank you very much.

[Whereupon the hearing adjourned at 12:30 p.m.]

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